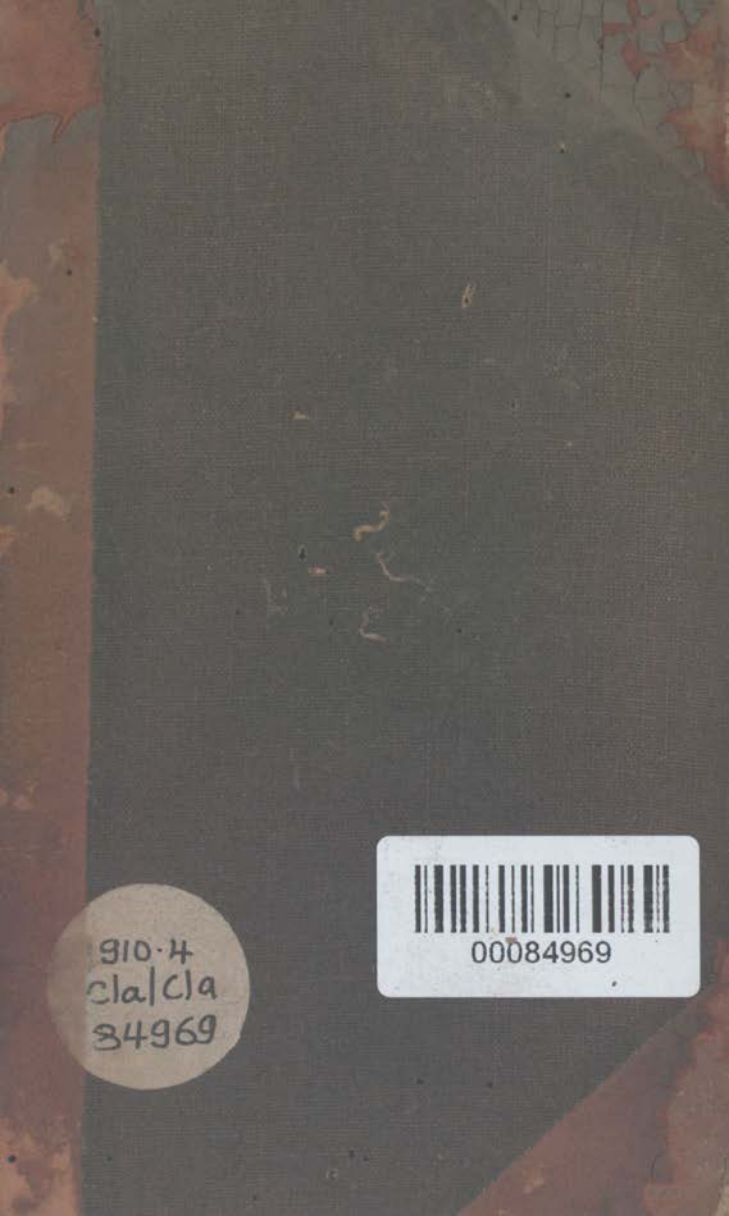
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OF THE

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EASTERN ISLANDS
OR
MALAY ARCHIPELAGO
ARCHIPELAGO FILIPINO
BORNEO
CELEBES
PACIFIC OCEAN

THE CLAIMS

OF

JAPAN AND MALAYSIA

UPON

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CHRISTENDOM,

EXHIBITED IN

NOTES OF VOYAGES

MADE IN 1837,

FROM CANTON,

In the Ship Morrison and Brig Himmaleh,

UNDER DIRECTION OF THE OWNERS.

IN TWO VOLUMES.

NEW-YORK

E. FRENCH, 146 NASSAU STREET

1839.

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SCATCHERD AND ADAMS, PRINTERS.

VOLUME SECOND.

NOTES

MADE DURING THE

VOYAGE OF THE HIMMALEH

IN THE

MALAYAN ARCHIPELAGO.

BY G. TRADESCANT LAY,

NATURALIST IN BEECHEY'S EXPEDITION, AND NOW AGENT
OF THE BRITISH AND FOREIGN BIBLE SOCIETY
FOR EASTERN ASIA.

PREFACE.

THE writer of the Notes on the Voyage to Japan, in his preface has alluded to this voyage of the Himmaleh, remarks on which, by Mr. Lay, are given in the subsequent pages.

The objects of this voyage may be best learned from the instructions of the owners to Capt. Fraser, which were substantially as follows:—

"*Canton, 26th Nov.* 1836.

"To CAPT. A. V. FRASER:

"Dear Sir,—We now instruct you to proceed from your present anchorage (Lintin) to the roads of Macao, and there to receive Messrs. Stevens and Lay on board the Himmaleh. These gentlemen will accompany you on your cruise southward, and we beg your kindest attentions to them.

"Leaving the roads as soon as these gentlemen join you, we wish you to proceed to sea, and if the weather and winds outside permit, to touch

at one of the ports near the south point of Hainan, named as safe anchorages by Horsburg.

"We do not wish any part of the specie on board the Himmaleh to be employed on the coast of China, but the gentlemen on board will use their knowledge of the language to communicate on the subject of trade, &c., if they see fit, with the Chinese officers; we wish you to give them the means of carrying out their views on this point, as well as respects intercourse with the Chinese people.

"Unless your reception should be very inviting, we would not have you delay beyond a week in Hainan.

"Were there ample time before you, a longer stay would be desirable, and also some investigation of the coasts of Tonquin; as it is, we recommend your proceeding to Singapore, without touching there, or on the coasts of Cochin China.

* * * *

"On arriving at Singapore, you will hand the accompanying letter (of introduction) to Mr. Balestier, and endeavor to collect from him all the information you need on your subsequent voyage.

"Your passenger, Mr. Lay, having business at Malacca, we wish you, in order to facilitate matters, to take him thither and back to Singapore.

* * *

"Mr. Balestier will aid you in preparing a small investment, for Borneo, of such articles as they

like there, opium and fire-arms excepted; and a few articles, as presents, should be taken with your cargo.

"It is our hope that you will be joined at Singapore by one of the gentlemen of the (American) mission, who has been in Borneo, and understands the language; should this not be the case, it may be necessary for you to touch for an interpreter at Batavia. We hope, however, that you will have no need to approach any Dutch port, and that the weather, on leaving Singapore (as early as possible), will permit you to steer for the Borneo coast, a little north of the Sambas river. Following up the north-west coast of this island, you are at liberty to examine it and its people, so far as can be done without great loss of time, and as is permitted by the weather.

"We regard the city of Borneo (Bruni), however, as your destination, and to it, its access and capabilities, we call your best attention. By maintaining a pure and lofty character in your intercourse with its native authorities, we hope you will succeed in gaining a footing at this important settlement. We enclose a memorandum of the points to which we wish you to secure a favorable hearing from the Rajah. The gentlemen on board, will, we think, assist you greatly in producing the desired impression.

"Having accomplished the object of your visit at Borneo, in two weeks if possible, we would

have you proceed around the north point of the island, and examine, as you go along, the seats of trade and population. * * *

"We have a favorable idea of the position of the Sooloo Islands, and would have you ascertain if there be a place among them where a small depot of goods could be ventured.

"Your visiting Mindanao, we leave to your own judgment. We do not wish you to bring yourself into collision with Spanish influence.

"Should so much of your cruise be accomplished, and you have time to spare and get back to Singapore by the last of March, you may proceed to Celebes, and examine those parts of it which are not under Dutch influence. We shall be glad if you can extend your investigations as far as Ternate.

"As to your return to Singapore, you may be guided by your own discretion; we are inclined to prefer the route south of Celebes and Borneo. * *

"In all your intercourse with native princes, we recommend the gift of some, not too costly, presents. Let the gentlemen with you have the earliest opportunity to exhibit their medical skill and benevolent intentions.

"While you are proposing the opening of commercial intercourse, let it be seen that you concur in their wish to gain a footing for medical and Christian residents.

"In recommending that Dutch and Spanish settlements be avoided, we do not mean that you should pass them by, when information is to be gained, or when in need of refreshments. When visited for these purposes, it will be better to say nothing about commercial purposes.

"We are aware that you need no instructions to do all in your power to make additions to nautical knowledge, by surveys, &c.; these will be appreciated by ourselves and by our government.

"As to the point of defence,—we believe that, among the Malayan islands, those who are seen to be prepared for attacks will not often be molested.

"We therefore recommend constant vigilance, and with this always apparent, we trust you will have no occasion to use your armament. If attacked, you will defend yourselves.

"In naming the last of March as the date of your return to Singapore, we are governed by a regard to a further voyage northward, which will employ you through the coming summer. * *

"It remains only to commend you to the keeping of Him, whose great and beneficent purposes will be advanced, we trust, by this expedition.

(Signed) OLYPHANT & Co.

"MEMORANDUM of propositions (enclosed) to be made to the Sultan of Borneo and other native princes.

"1. The country from which we come is the United States of America. It is civilized and powerful, able to defend itself from all enemies, and punish injustices done to its people; but not addicted to war or conquest, and having no colonies.

"2. Its intercourse with other nations is peaceful and commercial; its ships traverse every sea, and its merchants exchange, with men of all nations, the productions of their mutual industry.

"3. It invites men of all nations to come and visit it, giving them free permission to travel or reside in any part of its territories, and extending to them the same protection as to its own people.

"4. It has dollars, iron, cloth, &c., which it can exchange for the pepper, coffee, &c. of your country; we therefore ask permission to come with these, and would have you inform us at what times and in what quantities you can furnish your productions.

"5. We will come regularly, if thus informed, and take from you these your surplus products, and ask a list of the articles you would have in exchange from us.

"6. If it be more agreeable to you that our traffic be continued, and not interrupted by each departure, we will bring a commercial agent to reside with you.

"7. Moreover we have men in our country very

skilful in the healing of diseases; shall we bring one of these to dwell with you?

"8. We have much wisdom and knowledge in the books of the language of our country, and we are taught in them that it is more happy to give than to receive; shall we bring one capable of imparting this knowledge to you?

"9. Our government is accustomed to send abroad consuls; if it be your desire that one be sent to you, we will carry letters to that effect to our President, so that he may send one to you.

"10. When we are gone, should any vessel of our country visit you, or be wrecked on your coast, we beg you to receive them kindly. Should any of the crews misbehave, we entreat you, inasmuch as there are bad men in all nations, not to involve the innocent with the guilty.

"N. B. These propositions are not formal, but embody merely the objects of the visit to the Eastern Archipelago."

In addition to these, another authority was given to the Rev. Mr. Stevens, a member of the mission of the American Board in China, as will appear from the following extract from a parting letter to him:

"We give you, enclosed, a copy of our letter of instructions to Capt. Fraser. We would very willingly have placed him more distinctly under

you control, but the route having already received your approbation, it has appeared to us that Capt. Fraser's concurrence would be best secured by preserving to him his feelings of independence. Should the case arise where you see that any of the important objects of your presence are likely to be lost through Capt. Fraser's impressions of his duty to his employers, we authorize you to assume the responsibility, and engage his concurrence on your authority."

But this provision for the fulfilment of the higher ends of the expedition expired in the regretted death of Mr. Stevens at Singapore. The Rev. Mr. Dickinson succeeded to his place, but his authority was not deemed transferable; and the voyage was prosecuted under Captain Fraser's directions. Circumstances out of the control of the owners have prevented them from adding to Mr. Lay's missionary and scientific notes any of a commercial or nautical character, and consequently there is less of value to communicate than was anticipated in the outset of the attempt. But it is hoped that something has been effected to attract attention to this interesting region—something done to develope the obligations which rest upon all that bear the Christian name—whether in private, ecclesiastical, or political relations—to move forward in ameliorating the condition of the pagans in the Malayan

Archipelago. The missionaries of the Son of God are there, and upon the borders of China, importuning for more of such help as was *designed* for them in the attempt by the Himmaleh. The word of life and thousands of tracts they have made ready for distribution; but there are no means of sending the "swift messenger" with his precious freight to dispel the moral gloom that rests upon regions so beautiful in the works of nature as are these. Shall their cry be in vain, or is it a senseless one? Let us think of it, and act in view of the command to disciple all nations, and of our superior advantages, as Americans, to respond to it. To exhibit these, has been the object of a correspondent of the Chinese Repository (Vol. VII. Nos. 1 & 2.) in two articles under the head of "American influence on the destinies of Ultra-Malayan Asia;" and, directing the attention of the reader to these, we do him and our cause a better service than by extending any further, remarks prefatory to those which occupy the following pages.

VOYAGE OF THE HIMMALEH.

In laying before the public a few remarks and observations collected by the writer in his voyage, it is merely justice to state, at the beginning, that the plan was drawn out, and the costs of the expedition sustained, by the owners of the American brig Himmaleh. Its object was to ascertain whether any openings could be discovered for missionary effort, to set on foot some kind of commercial understanding with Borneo Proper, and at the same time gather all the information we could of a religious, moral, and scientific nature; with the view of calling the attention of Christians on both sides of the Atlantic to this ill-used and most neglected portion of the globe. Impressed with the desirableness of the attempt, the author gladly accepted an invitation, and went on board the Himmaleh as a passenger in the expedition, to see what opportunities might be found for distributing the Scriptures, translating them into new and hitherto untried

dialects; and, in a word, of promoting the simple but comprehensive views of the British and Foreign Bible Society. And as the same God who devised the plan of redemption, established the laws of creation, there can be no variance between the doctrines of revelation and the lessons of nature. Hence we thought it would prove neither useless to ourselves nor unacceptable to the public, if the writer should bestow such attention upon natural researches as spirits, health, and leisure might enable him; especially as several years' experience has rendered such employment easy and familiar. The first part of our undertaking was to do immediate good by dispensing the word of God, and commending it to the hearts of the heathen by deeds of Christian kindness; the second was, to gather up some of the results, and by them encourage and direct the minds of others. There have of late been many proofs given of a ready mind among the disciples of Christ, and nothing appears to be necessary but to show in what way this readiness can be turned to the best account. Our voyage is over, and all the little good it was possible to do, is finished; and now, in order to com-

plete the second part of our undertaking, at the special request of the projectors of the voyage, I am going to cull, from notes and the records of my memory, such thoughts and pieces of information as may seem best calculated to interest and instruct. I shall not borrow much from my predecessors, and refer to little that did not come within the reach of my own observations. Had it not been for the instance of the respected partners of the house just referred to, I should not have written a book at so early a period, for my head and my heart are filled with prospects of the future; and most travellers defer the pleasure of putting their story in print till they return, where the charms of quietness, and the endearments of family and home, put the mind in the best frame for securing a lucid arrangement in the detail, and a harmonious fluency in the style and diction.

Our passage from Macao Roads to Singapore occupied about twelve days, from the 3d to the 15th of December. The weather was rough and boisterous, which is its prevailing character during the north-east monsoon. This suggested a hint to us, that if we wished to visit the shores

of Hainan, or any part of Cochinchina above 12° or 14° North latitude, we must not make our attempt during this season of the year; for stormy winds and a raging sea would render it unsafe, if not impossible, to cruise from port to port on a coast where the advantages and disadvantages of tide and current, the perilous spots and quarters of refuge, are so little understood. It is said in Holy Scripture, that evil appeareth out of the north, which is true when applied to the meteoric phenomena of this hemisphere; and seems to be brought about by the collision of air-currents differing widely in temperature. This difference of temperature between conflicting tides in the atmosphere is one of the principal agents in the changes of weather, and produces effects, I believe, that bear a constant ratio to its magnitude. In the south-east monsoon the general character of the weather is fine and serene, interrupted now and then by a squall of short duration and limited extent. On the contrary, in the north-east monsoon the wind is strong, and the sky lowering and tumultuous, so that ships are often in danger of being driven on rocks and shallows that stud many parts of the Chinese

sea. If what was quoted from Scripture about the north be only true by accommodation, we have a passage respecting the wind from the opposite quarter, which needs neither comment nor turning to fit it for application. It is from the lips of Elihu, who had studied the works of God to a good purpose,—"When he quieteth the earth by the south wind."

We had several Chinese on board, who, of all men, suffer most from languor and nausea; and as they are but children on land, they cannot choose but to be babes at sea, when hoary custom on one hand and the countenance of friends on the other, no longer help them to a courage which has no spontaneous existence within them. Among the rest was Leang Afa, who shared in the sufferings of his countrymen, and did not recover himself till the fine morning of Sunday, December 11, a week after our embarkation; when he appeared on deck with a smile of gratulation to welcome a state of the elements so agreeable, and, reclining against the pump, read the Epistle of St. Paul to the Ephesians. It happened that the chief mate was standing on the quarter-deck, exercising his eyes and his

thoughts as an officer ought to do, but not his hands. Afa, however, supposing that he wanted some employment befitting the Lord's day, handed him a Chinese gospel, and endeavored to say something by way of recommendation; when he found himself not understood, he sent for his son to tell the officer that the book was a part of the New Testament. After this he called a Chinese scholar, and commented upon the text, as if determined to have some partner in the joy he felt in looking over the word of God. A small circumstance will sometimes intimate the prevailing character and feelings of an individual when there is no opportunity for the display of greater.

At Singapore, the Rev. Edwin Stevens and the master of the vessel fell a prey to an intermittent, which carried off the former amidst the hopes of recovery. He was a man of solid worth, and a missionary whose sphere of enjoyment did not reach beyond the bounds of usefulness. To do good and to be happy, were to him in practice identical.

When I saw the two most important individuals in the expedition stretched upon a bed of sickness, I said in melancholy reflection with old

Jacob, "All these things are against me; it is God's pleasure that nothing should be done for the islands, their bondage is perpetual, and all attempts to knock off their chains will be frustrated." But such inferences have much of human weakness, and nothing of the spirit of God in them; for trials are sent to exercise our faith, to purify and not destroy our hopes. This affliction occasioned a delay of six weeks, and gave me an opportunity of staying longer than it was purposed at Malacca, and thus to cultivate a better acquaintance with the state of things upon the Peninsula. It seems that, at about twenty miles from the city of Malacca, there is a fair scope for missionary enterprise, without the risk of entering upon another "man's line of things." A knowledge of the Malay, not in the poor and scanty form in which it is commonly used by foreigners, but as it is spoken by natives in their communications with each other, added to some experience in their customs and modes of speaking, would introduce a good man to a field of labor that is replete with interest and importance. When a Malay hears his language mixed up with barbarous idioms, the ear is hurt and the

mind confounded; but when it is uttered with idiomatic and native purity, his heart is delighted, and he cannot imagine that any thing but wisdom and truth could be conveyed in a style so appropriate and so agreeable to his feelings; while the speaker is regarded with the highest respect and veneration, as if he were something above the ordinary level of human nature. I have had opportunities of seeing this remark verified, and feel great confidence in asserting, to use a humble phraseology, that every thing may be done with a perfect knowledge of the language, and nothing without it. And for the encouragement of those who are meditating a missionary life, let me remark, that though a familiarity with an Indian language be the result of time and a daily intercourse with the natives, it is not so serious a business as many seem to think it before they have tried the experiment under favorable circumstances. The Malay is a graceful language, and its sounds are melodious, and consequently easily remembered. Nay, in reference to the Chinese, which report has invested with every attribute of fearfulness, it may be said with truth, that if a missionary were permitted

to enter the country, and mix with natives of his own standing, and enjoyed all social intercourse in that language, what was expected to be the labor of many years would be half finished in a few months. There is one infallible rule for the acquisition of a strange language, which is, to live in daily communication with those who speak it.

We left Singapore on the 30th of January, for the Indian Archipelago. The relative positions of the islands that belong to it may be represented to the imagination by a vast triangle, having its base formed by Java, Bali, Lombok, Flovis, and Timur; its eastern side by a part of New Guinea, the Moluccas and the Phillipines, which stretch into an elongated apex towards the north; the western side by Borneo and the S. E. corner of Sumatra. The languages used along the sides and decovetions of this triangle are very numerous; but all alike remarkable for their softness of sound and simplicity of structure, just as the inhabitants greatly resemble each other in physiognomy, if we except the Papuans. As the several tribes have advanced in civilisation, so their dialect partakes of a common language, which

has been called the Polynesian. The focus from which this radiated was perhaps Java, since a reference to that tongue explains the nature of compound words, and clears up difficulties in the figurative use of others. The effect that this Polynesian tongue—which, if theory be correct, is no other than the Javanese—has exerted upon the several mother dialects of the people, is analogous to that diffusive ascendancy which the Sanscrit has over the various languages of Hindostan. This similarity in sound and the participation in one common dialect, is not only interesting as a philological or historical curiosity, but as it renders the language of any one island of easy acquisition by the natives of any other; and therefore when the word of God is translated into one tongue, it is not difficult for him who speaks another to learn to read it. We went gaily before the monsoon, which, influenced perhaps by the coast of Borneo, sets from the N. W., and is at Macassar called the westerly Musim; Musim being the term applied by the Malays to the wind that blows from one particular quarter during a certain part of the year, and in common language it denotes a season, or the year itself. After

sweeping past the Carimata Islands and along the southern shores of Borneo, we came within sight of Tamakeke on the 7th February. This is a low sandy, island, not far from the western side of Celebes, covered with trees and shrubs that flourish in the liveliest green, notwithstanding the seeming unproductiveness of the soil beneath. Its substratum is coral or limestone, formed of various kinds of madrepore; and thus resembles many of the islands in the southern Pacific. The botany reminded me of what I had often seen among them, particularly in the presence of the *Cordia* and *Tournifortia;* the former distinguished by its deep orange-colored blossoms, the latter by its large silky leaves and blue flowers, borne in clusters, that twist in a spiral manner, like those of the Heliotrope. The flowers of the *Cordia* had closed at least an hour before sunset to take their fancied repose for the night; but it was with surprise that I found them expanded on the following morning, though they had been kept in a bag from the influence of light and air, so close is the connection between the sun and the habitudes of a flower. I would the secret sympathy between our hearts and a

better sun were equally strong and uniform. A few traces only of habitation were discovered, and our stay was short, as night was coming on, and there was no motive why we should expose ourselves to the assaults of unknown foes, who might be lying in wait to surprise us. Our ship was well appointed with men, arms, and ammunition; so that we had little cause to be afraid of pirates at sea; but in such excursions we leave our weapons in the boat, wander at large, and our minds become entranced with the lovely objects around us. A few men lodged in ambush might then easily cut off a straggler, and retreat into the thicket before the rest could come to his assistance. What Thucydides, in the 6th chapter of his first book, says of the older tribes, who occupied the islands and maritime shores of the Mediterranean, is exactly true when applied to the natives of these islands. Robbery is a very common, and by no means a dishonorable profession. Armed vessels have checked and controlled the practice, but not yet extinguished the propensity. The constant liability to be set upon by those who came to kill and plunder, rendered the custom of wearing arms at all times,

expedient; hence the Malay never parts with his kris or short sword: while he walks forth, it is carried in his girdle; when in his house, it is always within reach. But in thinking of the men that haunt these places, we had forgotten the beauty of the places themselves. For in regions near the equator we seldom find an island, whether it be a small level patch or a rising knoll, that is not clothed with verdure all the year round; a circumstance which is owing, not so much to the warmth and moisture of the atmosphere, as to the softness of the winds that blow upon it.

We continued to hover about the eastern side of this island till the 10th, when, after another ineffectual attempt to advance a little further towards Macassar, the place of our destination, we resolved upon coming to an anchor, and sending a boat thither for a pilot. I should here observe that the Island of Tamakeke belongs to a series of islets, that form a kind of breastwork a short distance from the coast of Celebes. This line we ought to have entered above two small islands, called "the Brothers," to the northward of Tamakeke; but the *Directories* gave us no hint about the matter, which leads me to make the allusion here, that

another may not commit the same mistake. The errand of going to Macassar to bespeak a pilot, was undertaken by Mr. Dickinson and myself; and we accordingly set off early in the morning, in a boat, without awning or umbrella to screen our heads from the sun. The clouds befriended us a little, but we for a long time after retained some traces of nine hours' exposure to the heat of a tropical sun. We set out with an impression that we had only to weather a distant point, and then the coast trending to the N. E., we should run up to Macassar with a fair wind. But in this we were disappointed; for, though there are three jutting points, the coast-line maintains the same direction, and the wind continued nearly ahead all the day, since, to use a seaman's phrase, it always draws along the shore, though its course a few miles off should make an angle with it. As we looked out with eager eyes when we rounded each point in succession, if haply Macassar might lay in the bosom of some withdrawing nook, we proposed to call our trip an expedition in quest of Macassar. But the lover of Nature can always find something to admire and something to instruct, whether his path be

smooth or rugged. We watched the groves to trace new forms in the vegetable kingdom, or gazed upon the distant mountains, which run out in bastions, or rise up in mammillated tops, and are now and then fenced at the base by the outwork of a detached hill, which contributes greatly to beautify the scenery, while the eye falls with ease and refreshment upon the green plain that stretches to the shore below. In one place we saw a number of horsemen, mounted on steeds of very small size; whose beauty and spirit, however, compensated for their want of bulk. In Celebes the breed of horses is small, but very handsome; the rider is also small, and owes little to the nature of his trappings; but holds with so firm a gripe, by placing his foot in the axilla, that it would be no easy matter to unseat him. At last some specks of white were descried, always a strong indication that something of European finish is not far off; and as we advanced, the brown roofs could be seen, which gave us assurance that Macassar, the object of our search, was before us. There is no place that assumes a more gloomy and forbidding appearance than Macassar at this season of the year, when, from

the abundance of rain, the walls are covered with moss, and so lead you into an involuntary belief that the dwellings within the city walls have all been deserted; especially about the hours of four and five in the afternoon, when the inmates have retired to take their siesta or customary nap. Our prospects of entertainment looked very untoward at first, but after we had been conducted from the house of one officer to another, we finally found ourselves at the Governor's residence, who despatched a pilot to conduct the vessel, and sent to the Club house, as his own hospitality was occupied, to procure a lodging for us; while the first lieutenant of the Dutch sloop of war took care of our officer, and gave the men an opportunity to rest and recruit their strength before they returned. There may seem to have been nothing extraordinary in all this, but our hearts were imbued with sentiments of the deepest gratitude to the great friend and guide of our life, because every thing had turned out just as we could have wished, not as we had reason to expect. For we were strangers to the customs of the settlement, without letters of recommendation, jaded and way-worn in

our appearance; but though we came there somewhat in the light of suitors, to the credit of humanity be it spoken, we lacked neither respect nor kindness. We met the captain of the Dutch man of war, whose knowledge of English literature, joined to a very extensive acquaintance with the world, made us feel at home in conversation. But when I mention this individual or the Governor in terms of respect, it is not implied that we owed no obligation to others; for I believe there was no one in the numerous settlement who would not have taken a pleasure in making us happy, and if some showed us no kindness, it was because we did not give them an opportunity of doing it.

We arrived at Macassar on the evening of Friday, the 10th of February, and left the anchorage on the 6th of March; and consequently made a longer stay than we had contemplated, owing to the loss of some of our crew, and the difficulty of supplying their place with Javanese seamen. The delay was not altogether unprofitable; we tried a few experiments, and gained some information: their nature may be inferred in part from the following brief details, and their

ultimate weight and interest must be determined by the effect they may have upon the minds and conduct of our brethren at home.

Soon after the arrival of the Himmaleh at the harbor of Macassar, which is defended from the effects of the north wind by the chain of islets before mentioned, we took measures for landing a part of our books, especially when we learned, from the friendly communications of Mr. Vanderlinden, that no difficulty would be thrown in the way of such a proceeding. Neither Mr. Dickinson nor myself took the trouble to reckon the number of books that we conveyed ashore, being much more anxious to see one volume bestowed where reasons induced us to think it would be read, than a thousand where no such tokens appeared. The sight of our multifarious packet, when spread upon the floor of the Custom-house for inspection, with its parts scattered hither and thither by the examiner, attracted the gaze of many spectators, and interested the attention of the officers, who, when they perceived that our wares were not landed for our own use and behoof, but for the good of others, begged a place among the donees. It happened that among the

rest were a few Testaments in the Malay language, printed after the orthography invented and used by the Dutch, being the Roman character with some additions to convey sounds not found in the language of Holland. As books printed in this way are seldom of any use to Malays, except they have acquired a knowledge of the European mode of writing in an office or a counting-house, we looked upon these Testaments, in their uncouth and mixed character, as little better than so many incumbrances. But in drawing this conclusion, we were very pleasantly mistaken; for several officers of the estsblishment, and perhaps I might say all, had been wishing for Bibles in this peculiar dress, since they understood the Malay language better in some respects than their own; but yet were strangers to the Arabic letters, in which, since the introduction of Islamism or the Arabic faith, it has been the invariable custom to write it, at least among the natives. This circumstance made us very happy, as it drew every one present, without exception, into the little focus of sympathy and interest which we were endeavoring to excite by the free distribution of our books. The crowd

that pressed around us was composed of Chinese, Malays, and all the various amalgamations of the human species, that usually, for lack of better employment, flock together about such places to hear and see some new thing. A retiring modesty is many times, and very seriously, enjoined by the canons of Chinese politeness, which they affect to use, though they may have none inwardly in all their intercourse with their fellow-creatures. On this occasion the respectful mien and attitude of those who came in the quality of suitors was probably real; for at Macassar, as no man careth for them out of any spontaneous emotions of good-will, they could scarcely help feeling a sort of veneration for strangers, who showed such an unbought concernment for themselves and their literature. They knew but little about their own character, as the means of, and the inducement for learning, are very scanty; so that their admiration was very much increased by seeing that those curious hieroglyphics, so highly valued in their beloved country, were not altogether unintelligible to their benefactors. It was very refreshing to hear remarks made by some members of the settlement, who looked on

while we were busy at our work, which seemed to intimate that they took a deeper interest than ordinary philanthropists in the salvation of the heathen. There is a holy savor sometimes in the passing observations of a good man, which is always the more charming by just so much as it is unexpected. Among the various applicants was a schoolmaster, who, in the ready phraseology of the Malay, begged a little bundle of Bugis tracts of my companion, to distribute here and there among his scholars and his neighbors, as he might find them able to make use of them. It is a light in a dark place to find a man, where the nurture of the heathen is almost totally neglected, who makes it his business to train children, especially when we have reason to believe that he views education not merely as the means of qualifying them for a useful life, but of sowing those seeds which, under the blessing of heaven, may be unfolded into a ripeness for eternity. Mr. Vanderlinden, our kind friend and fellow-helper, derived his knowledge of the truth from some English missionaries in the first instance, and his subsequent improvements among some of the disciples of Christ from the other side of

the Atlantic, and now exhibits a kind return, by assisting us with his friendship and advice, and by allowing himself to be considered as the depository of Bibles and Testaments for the supply of those, who, in this distant corner of the earth, have ability to read and grace to desire the possession of God's word. In our walks up and down a long street that on the outside of the walls of Macassar runs parallel with the beach, a dense crowd followed behind us, just as they do when a raja, or person of eminence among them, walks forth, with this special observance, never to step a-head of the great man. As the street just mentioned is the bazaar, or, in the Malay pronuntiation, pasar, and this was the season for the *wayang* or scenic exhibitions of the Chinese, our train was not made up altogether of select materials; so that, after distributing a few to those whose countenances we liked best, we left the rest, as some of their importunities began to be a little too saucy, without staying to learn whether they could use our books or not. The being able to read indifferently—for much proficiency in this way was out of the question—was considered by us as a necessary qualification; and

we soon made up our minds never to listen to any suit when the beggar assumed the tones and accent of the buyer. This was, however, never the case when we visited any other part of the city, wards or kampongs as they are called ; and it only exemplifies a general observation, that in or near the market-place "certain of the baser sort" are always to be met with. It must not be forgotten, to the credit of many even in this obstreperous crowd, that they asked the price of the books with the evident intention of paying for them, and could hardly be persuaded that they were presents, and not articles for sale.

But what raised the interest of the people more on every occasion, was the appearance of two little tracts printed in the Bugis character. They were most eagerly sought for by those who could read them; others, who just knew the characters, begged for them under a promise that they would learn to read; while many, who only heard that they were in this highly admired alphabet, would often borrow one a few moments, that they might delight their eyes by gazing at leisure upon a thing so lovely as *surat Bugis*, a paper inscribed with Bugis letters. The sym-

bols used by the Bugis to denote vocal sounds are neat and unaffected, and were derived, it would seem, from the Sanscrit, as they are grouped in alphabetic arrangement into clusters with reference to those organs of speech which take the lead in their enunciation. Every letter has the vowel sound as *a* in father, inhering in it; while the other vowel sounds are indicated by marks placed before and behind, above and below the letter. The nasal sound, which we express by *ng*, is so soft in articulation, that it is denoted by a minute hook over the letter, as if it had been merely a vowel. A learner is surprised to find a vowel put before the consonant; but a specimen of the same practice is found in the Sanscrit, where a character that resembles a cart-whip is either long or short *e*, according as it is placed before or after the letter to which it belongs. If we were to say that the Bugis and the Malay are dialects of the Javanese, we should not be far wide of the truth; as there is a very great resemblance in melodious softness, in structure, and in a vast number of words which are identical.

This is not merely a philological fact, as we re-

marked before, but suggests to us a useful hint for practice; for, since this is the case, it will be a great help to a missionary in acquiring a thorough knowledge of one to study the rest. In communication, when we seek to put another in possession of our ideas, to speak of our finer sentiments, or to describe with accuracy either the objects of nature or the processes of art, we find that these dialects are very deficient. There is, therefore, a strong reason why a man, who desired to make these people wiser and better, should ransack every department of the language, and converse with different tribes, in order to increase the little stores with fresh additions. And here I would offer one suggestion to the religious public of the United States, as they have begun to take an interest in the Archipelago, which is, the propriety of sending a young man of literature, piety, and spirit, for the special purpose of gaining a complete knowledge of the Malay, Bugis, Macassar, and the Javanese; with the promise, if it pleased his constituents, of being installed into some professorship on his return. This would form a standing memorial of these places, afford all who were destined for them the means of

gaining an elementary acquaintance with the languages, while the missionary would have some one to whom he could refer in adjusting many questions between himself and the public. To gain a knowledge of these harmonious divisions of speech would be a highly interesting, and, I am warranted in saying, by no means an arduous undertaking; and am persuaded that a missionary who knew one would find it rather a pleasure than a burden to acquire the rest.

By our visit to Macassar we ascertained the important fact, that a translation of either the whole or a part of the new Testament, would not only find some readers, but also become the means of creating others, among those who are now destitute of books, and therefore cannot cultivate the little they learned in their youth, nor get instructed by those who understood more than themselves. I was very anxious to set on foot a version of some part of the new Testament immediately, and made application to the Governor, who kindly sent me his secretary for the languages of the island of Celebes. It occurred to me, that if this man would render a chapter from the Malay into Bugis, which is a faithful translation if not always in-

telligible to natives, with the same fidelity that he is required to render any diplomatic instruments or correspondence, it would form a good beginning. He turned a part of the fifth chapter of Matthew into Bugis, which was translated back again into Malay by another interpreter, which the Governor had the goodness to send me. But I was obliged to drop my design, as I could not take these men with me without being involved in their affairs; for, whether rich or poor, if a man of rank, it is fashionable for him to have his circumstances so embarrassed in a jarring chaos of debtor and creditor, that he does not know which way to turn himself. Dr. Leyden translated some portion of the new Testament, which must be sought for and printed, if upon examination it should be found to be worthy of circulation. In the committee of the Bible auxiliary, which I organized at Singapore, a certain number of members were set apart and formed into a sub-committee of translation, for the express purpose of encouraging all attempts that might be made to transfuse the truths of Holy Writ into new and untried dialects. And as they have entered into their labors with a due sense of the

important bearings of such a society, I trust they will want neither the will nor the opportunities of accelerating an object so much to be desired. For among the Bugis we have a people who possess a spirit of enterprise, activity, and a love of freedom; qualities, indeed, which, from the depravity of human nature, are often instruments of evil; but which, under the benign influence of the gospel, become the moral channels through which good flows into the heart, and is from thence spread into the life of a human being. The Holy Scriptures would supply a national basis for their literature, yield them the means of education, and sow the seeds of eternal life wherever they met with a true and honest heart, prepared by the grace of God to receive them.

Several thousands live near the city of Macassar; but their home is on the Bay of Boni, where a confederacy exists, which is a curious combination of despotism and liberty. For the hereditary sovereigns of eight states form a council for exercising the functions of government in the Union, and for the purpose of electing one of their number as president, and investing him with the executive department. The love and

reverence for a particular family appears among these trustees of freedom; for the choice of President or Arunga is limited to a particular family. Each one of these counsellors appoints his own prime minister for the regulation of public matters in his own particular state, where his will is law in all questions of a private nature; while all that have a general and federal concernment, cannot be transacted but by and with the consent of the rest of his brother counsellors. Their encomiasts have decorated them with many high moral and intellectual qualities; while others, upon a closer acquaintance, have found them to be nothing but a set of cowardly knaves, who never act an honest part except when compelled by fear, or allured to it by the prospect of gain. But travellers often deceive themselves, and lay up a stock of disappointment for another day, when they look for things which never spring but under circumstances most favorable for their growth. An unbounded and ever wakeful reference to their own peculiar interest is the motive cause that drives them to act contrary parts; but it is the native weed of the human heart, diverted and modified, but not diminished by eith-

er the sober seeming doctrines of Confucius or the moral romances of Mohammed. The purer morals of the Attic sage, when they flowed down the silver stream of Grecian eloquence, might have charmed this passion into a momentary forgetfulness of itself; but nothing short of divine teaching can at first check, and ultimately exterminate, this cleaving mischief and pest of all sublunary virtue and happiness. It is something that we have not a lazy nation, nor one accused of drunkenness or riot; but an active, bold, and sagacious people, who will, I think, be not like the tree in the desert, which seeth not when good cometh. It cost the propagators of the Mohammedan faith more than a century to bring them to embrace the "faith;" and it is a matter of rejoicing that they did not succeed in making polygamy fashionable, as at Borneo and other places; but the woman continues to be on a parity of condition with her husband, may be elected one of the arong, or members of the council, and after her marriage, retains her rights with such general allowance and recognition, that she sometimes governs her own province, while her lord is head of another, without the slightest interfe-

rence from that quarter. In my walks and visits from house to house, I saw many intimations of that respect and honor in which females are held among the natives of Celebes, and did not fail to note it as an evidence that sin had not deprived them of every thing that was amiable in their character. Besides, I never can divest my mind of the recollection of the many great things which females, in more favored lands, have done towards the furtherance of Bible and Missionary objects; and am glad to seize any glimpse of hope that the women in these dark and much neglected places will prove a blessing to their husbands and their children, by being among the first to lay hold on the truth whenever it shall be set before them. When we called upon a Bugis prince in the Kampong Waju of Macassar, we found him sitting upon the floor; his ledger spread before him and his wife close by his side; who, though her looks were youthful, seemed to be acting the parts of accountant and confidential clerk, and doubtless took an equal share of interest in all the mercantile speculations of her partner. In the South Sea Islands, and in those of which we are speaking, it is customary, when two

or more persons walk together, for them to follow each other, and if one is more honorable than the rest, he takes the first place; hence my servant, when he wished to know whether I required him to go with me in any of my excursions, would say, "Shall your servant follow?" Now, in Macassar, when I met a company of persons of both sexes coming to town or returning into the country, the females always walked before, while the males followed as a mark of respect; nor was it an uncommon occurrence to see the females mounted on horseback, while their husbands or male friends performed the humbler duties of groom by leading the animal. One evening I fell in with a party of youths, who were very desirous to obtain some of my books; but finding that none could read, I showed some reluctance to part with them. While I was talking with them, the mistress of a little cottage hard by, sent a child to bid one of the number ask me for a book, which he did in a tone that implied his respect for the individual, and his confidence that such a request would not be denied. They all assured me, with one voice, that she could read, of which I had some little proof; for she

soon discovered, rather to my surprise, that I had given her only one half of the work, and sent in haste to beg the other. On another occasion, whilst I was straying amongst the shady walks of a distant village, I met with a man who remembered the taking of Macassar by the English, and who endeavored to entertain me with a description of the several actions and skirmishes he had witnessed. When I showed him a book in the Bugis character, his countenance seemed full of delight and admiration ; nor did he keep his joy to himself, but after a glance or two called his wife to share in it, with an inimitable tone of tenderness and esteem, evincing that he considered her as the partner of all his joys as well as of all his sorrows. He then read aloud, for the benefit of the neighbors, who began to cluster around us; but as Bugis was not his native language, he now and then faltered, when his wife set him right ; he adopted her corrections with extreme complacency, and at last, when he was so bent upon giving me two little pieces of money in requital for my books that he would not listen to my refusal, the gentle assurances of his companion that they must be treat-

ed as presents, went so far with him, that all the money was soon restored to its lodging in the box from which it had been taken. It will be seen, by casting the eye over a map, that the island of Celebes is made up of peninsulas, which stretch out to a disproportionate distance, and give it a very singular configuration. It lies between the parallels of 2° N. and 6° S., and between the meridians of 119° and 125° E. Its length has been estimated at five hundred miles, and its breadth upon an average at about one hundred and fifty; which, when multiplied together, will give us an area of seventy-five thousand miles. The northern peninsula, which, by putting a part for the whole, we designate in common intercourse by the name of Manado, is said to be christianised; and we know that missionaries are stationed at Manado proper, Kima, and Macassar, amounting in all to four. It generally happens that they are obliged to fill the office of minister to the settlement; hence, being but few in number, and living under the eye of authority, their efforts must be curbed and limited in a manner that greatly interferes with their successful issue. The population of Manado, or

the northern part of Celebes, was said to be Christian; but this term must be accepted with many grains of allowance and abatement, for it is often applied to those who make an outward profession of their faith in Christ by submitting to the ordinance of baptism. This, however, I am by no means disposed to undervalue; for idolatry and Mohammedanism are laid aside, and the mind, being freed from such stumbling-blocks, is open to instruction. The eastern and southern peninsulas are but little known, though I was informed that the Dutch have settlements on the bays of Tominie and Toolo, with the view of cutting off the intercourse which other nations might attempt to cultivate with the inhabitants. When, in 1816, the British Government restored this fair island, among others, to the King of the Netherlands, if it did not resign them to the powers of darkness, it gave them into the hands of those who are determined to shut the inhabitants in, and bar up the entrance against commerce, the improvements of science, and the comforts of religion. Nay, sooner than the coffers of the king of Holland should suffer the defalcation of a single doit, half a million of God's creatures shall

be consigned to utter darkness without the means of recovery. What should a Christian and a philanthropist say to these things?

Between the two southern peninsulas is the bay of Boni, which is thickly studded with islets, and consequently of dangerous navigation. On the western side of it the Bugis hold their head-quarters at Boni and Wagu, not very far from the top of the bay. The latter of the two is the most renowned among the Bugis, who say that the gates of Wagu are always open to a true man of their tribe. On the Bugis country lies Sedindring, stretching along the boundary of Wagu to the northward of the lake of Labaya, whose waters are said to be one hundred feet below the level of the sea. With these the Bugis are often at war, prosecuting, it would seem, an apparent right to interfere with the sovereignty of that country. The Sedindring have sought the protection of the Dutch, who, going out on a late occasion to lend them assistance, met with a severe repulse, owing to an ambuscade and the cowardice of their native auxiliaries, who retreated at first panic-struck, and threw the European troops into confusion. This people speak the

Bugis language, and are reckoned among the admirers of the koran; but their confidence in the Dutch might, if properly managed, lead ultimately to the removal of this partiality, for we are apt to think our benefactors in the right, even when proofs to that effect are wanting. On the western side, towards the north, is Cape Mandhar, a promontory that terminates a broad projection of the island.

The inhabitants of this territory originally spoke a language peculiar to themselves, but they have now adopted the Bugis, which shows the influence that the latter must have exercised over them, while it reminds us of this important advantage—that one Bible would do for both nations. I think we ought not to rest till we see some portion of God's word printed in a language that maintains such an ascendency. It is said that the people set rather loosely by the Mohammedan faith; when shall one be permitted to go and take advantage of such a state of mind? A few miles to the northward of Macassar, on the western side of the island, is Maros, noted for its waterfall, and for various grottoes filled with stalactites. Not far from this the river of Boni takes

its origin, which runs nearly east, and crosses the country of Boni on its way to the gulf or bay of the same name. It may be said, in poetic phrase, to roll down golden sands, as particles of that precious metal are found among the fragments of rock, which are carried along by it. The people here are reported to worship saints, by which it is meant, I suppose, that they perform certain rites in honor of those who were much respected while living. After touching upon the principal places with an eye to what missionaries might do among them, we return to Macassar, which is conterminous with Goa, and of which, in flourishing times, it formed a part, under the name of Guah Mangkasa. About the middle of the 17th century the Macassars attained to a high pitch in maritime prosperity, extended their commerce to distant parts of the archipelago, and conquests to the Bootan and the Hylla islands, which lie on the eastern side of Celebes. But in the beginning of the 18th century they were reduced by the Dutch and their allies, the Bugis, who, jealous of the greatness of their rivals, were glad to take this opportunity to humble them. The poor epitome of former greatness is found

in the raja of Goa, whose palace is situated about four miles from the city of Macassar. It is embosomed amidst clumps of trees, which skirt the foot of the mountain ranges that rise behind it, and form a pretty landscape. It looks like a barn peering by the side of some country grange or farm-house, and tells what an unfinished thing eastern architecture is, especially when the glory and power of the tenants have fallen into the "sear and yellow leaf." The Macassars, though they have been brought low in circumstances, have not lost their pride, nor the recollection of by-gone affluence, upon which it is grounded. "We are the ancient people," said a native in a zealous tone for the honor of his country, when a bystander told him that I gave away Bugis books. He seemed to think that the latter had borrowed much from the Macassars; and as it is not impossible that the first gold coin seen in the Celebes was struck by their sovereign, Tomadenga, to them the invention of the alphabet may also be ascribed. In the history of languages we sometimes find, when two alphabets have many characters in common, that which has the smaller number is the more an-

cient. Thus, for example, the Amharic, or language spoken in some parts of Abyssinia, has more characters than the Ethiopian, which is the older, and only found in books. The alphabet used by the Bugis has four characters not used by the Macassar, which intimates, if the rule be supposed to hold good in this case, that the latter were the first to employ the alphabet.

The features of the Macassar are larger and more expanded than those of the Bugis, with a peculiar ruddiness to set off and freshen the brown tincture of the skin. His hair is loose and copious, and often hangs mantling about the temples, which gives a singular wildness to his mien and general appearance. There is something that looks like spirit and intellect in his countenance; and a few specimens of art and manufacture show that he is not deficient in genius, but all his capabilities have been long allowed to rest for want of opportunities and encouragement. Baskets of curious workmanship, and gloves of exquisite fineness, were shown me as proofs of that skill and taste which still remain among the chiefs; for here, as in many other states of a feudal nature, talents for art as well

as science are exercised only among persons of quality. Hence it is not easy to obtain samples of their works without time and interest as well as money. Industry here has no stimulus, no well-furnished stores or market stalls to put a man upon wishing for better things. Canjoli, or the vegetable wax used for lights, a few dye stuffs, a few drugs, a wooden comb, and a looking-glass or two, with some gaudy trifles of Chinese trumpery, generally make up the poor inventory of a shop. Money, that merchandise of universal acceptation, loses its value here by losing its convertibility, as nothing desirable can be obtained by it. The restrictions laid upon their commercial dealings by their masters have damped all their energies, and disheartened them in following their most favorite enterprises; for there is no restriction which can hamper a merchant more than that which will not allow him to sell his goods where, to whom, and at what price he pleases. In consequence of this, the natives in time had little to purchase with; and the Chinese junks, which used to come at the change of the monsoon, and give an impulse to their activities, now no longer make their appearance. In-

difference seems to have gone on increasing, not merely in a simple ratio of the time—for they are so devoid of care about their present supplies—that I think they would not repine if they had a great deal less than the little they now enjoy. They seldom enter into the service of foreigners; and I was assured by the native who waited upon me during my stay, that no Macassar-man ever condescended to cut a bunch of grass to feed a horse; and that those who submitted to this employment were natives of Bima, or Dima, a place in the island of Sambawah, from whence many poor people come hither in quest of a livelihood. Swarms of little boys and girls are seen everywhere, who have nothing to do and nothing to learn; and are as void of care as the little birds that twitter and pluck the berries of the misseltoe and the loranthus upon the trees in the garden. Their looks were sprightly, and their features often very handsome. Their bodies were clean, and free from any unsightly marks of disease; though, in most instances, they had no other wardrobe than a fresh and wholesome complexion. Some of the little girls, under a loose hair which hung loosely about their temples, showed

lineaments of great beauty and interest; but personal charms soon vanish, owing, I suppose, to the climate in some measure, but much more to the want of culture; for education, which bestows new graces upon the mind, has a kindly effect in preserving those of the body. When teachers shall be allowed to labor among the people with a full and honorable license, the worth of knowledge will be rendered obvious, a general emulation be thereby excited, and even in this remote region will be seen proofs to show what great things Christianity, science, and freedom can do for a nation.

The healthly aspect of the Macassars must, I think, be ascribed not less to habitual cleanliness than to purity of atmosphere or the simplicity of their fare. "To bathe and wash his clothes" is one of those few things that the Macassar-man regards as a part of his daily duty; so that, at the side of a well you may often see them washing their clothes and pouring buckets of water upon their heads copiously. And the mother, who thinks but little about the adornment of her children, and still less about their nurture, takes them to this favorite place of resort; and

there, with an abundance of the watery element, settles the simple and compendious business of the toilet. The Chinese, who live among them, are wanting in this particular; hence, in a list of forty patients, I had thirty-nine of that nation. A Chinese-man, even amidst much affected neatness, taste, and elegance, is, in many important details of attention to his person, a dirty animal; we shall not be surprised, therefore, to find this remark justified at Macassar, where poverty and neglect has brought him very low. In fact, their filthiness was so ingrained, and their disease of so long standing, that I despaired at first of being able to render them any assistance; and refused to give any medicine, till at length I was driven into a compliance by the repeated importunities of one whom I designated, for better recollection, "the troublesome old-fellow." I gave him a dose of medicine with the hope of being quit of him, but I was disappointed; for in two or three days he came back, much improved in appearance, with many others with him. He told my fellow-traveller that he was a great deal better, and must therefore beg a little more assistance to complete his recovery. He added, that after

our departure, no such men would ever come to Macassar again; and hence he must be excused if he seemed too importunate. To relieve the pains, or even to listen to the little tale of human suffering, opens the door of every man's heart at once; and as the good name passes from hand to hand, the whole neighborhood looks up to the individual with feelings of the greatest respect. This is not all, for it helps one to an intimate knowledge of the people, both in reference to their mental habits and their outward circumstances. He may study disease as modified by climate and modes of living, and trace its exciting causes in an extended sphere, which he cannot do when confined to a single locality. Besides, he practises with the greatest encouragement; for such is the susceptibility of the constitution here to medical influences, that the benefit is immediate in all hopeful cases, and the patient is made so happy in finding himself better, that the effects of the remedy are doubled by joy and good spirits. These events, which occurred at Macassar, are worthy of being remembered by those who make transient visits for the purpose of doing good; for they may open their dispensa-

ry with the highest probability of witnessing beneficial results, although their stay should be only for a few days. There is another advantage found in exercising the healing art among people living near the Equator, namely, the absence of an inflammatory diathesis, which relieves the surgeon from the greatest part of his care. If he succeeds in the operation, there is little fear of bad consequences, as the body seems to sustain the shock of an operation without being affected by it, as the restorative process is mild, and all the sympathies remain unruffled. There will be an interesting and highly instructive field for surgical aspirants, when it shall be customary for young men of piety to spend a part of their early career in gaining a knowledge of mankind, and in earning public confidence in distant countries. An insight into human nature under a different aspect, an acquaintance with other languages and customs, with a countless variety of natural observations, would be laid up; while habits of self-denial, patience, and a ready accommodation to circumstances, would be acquired under the best of auspices, to wit, the blessing

of the Great Father of all wisdom, truth, and mercy.

Leaving Macassar early in the forenoon of March 6th, we reached the island of Tanakeke about four in the afternoon, where we cast anchor to wait for the favor of another day. The varied grouping of hills and mountains, the nipple-like form of some detached elevations, and the denuded spots upon the ridges, compose the chief characteristics of the land as viewed from the sea. The mention of bare spots must not lead us into the supposition that the ground is actually devoid of vegetation, for I found by experience that places, which seemed equally barren to the distant ken, were in reality covered with grass several feet in height. In China the ridges are truly barren, but in Celebes they only seem to be so. Nothing like a cliff emboldens the shore, which, by alluvial deposition, is spread into a low and even strand. The beach is in no place remarkable for its whiteness, but nowhere so dark as that of Macassar, which is principally composed of minute grains of trap. On the following morning we got under way betimes, and cruised along the shore on our way to Bontain

on the southern side of Celebes, contemplating the land at times, to catch the first glimpses of new scenery. The coast, however, continued to wear the same aspect; hills, with apparently barren ridges, skirted with *sawahs* or green plains at the foot. The absence of cliffs, and the consequent deposit of much alluvium, is kindly ordered by nature for the cultivation of the rice, which is the staple and indispensable article in their Indian's bill of fare. We had many aspects of the mountainous chain that forms the medial line of the island. Here a variety of bastions run in ascending series towards the highest peak. Some time before we opened the harbor of Bontain, I sketched a part of the ridge that runs eastward, at the further extremity of which, Slange Berge, or Snake Hill, so called, perhaps, from a fancied resemblance to a serpent when gathered up into a coil, lifts its isolated height; while the islands of Salayer are just descried above the verge of the horison. The Bay of Bontain is a wide indentation in the coast withdrawing towards the peak, which is the highest point in the island, and is seated about fifteen miles within its margin. The scene on the right, left, and in front, is of a

sublime and imposing character, and well fitted to make us feel the goodness of God and the littleness of man. As we were proceeding the same day, a lowering assemblage of clouds hung on our rear, and seemed to threaten a deluge of rain. But this, as I at first anticipated, was only the line of demarkation that separated the region of wet from the region of dry weather. The clouds are wafted to a certain distance by the monsoon, and there, having reached the utmost bourne, they stop, as if wearied with their journey. Macassar and Bontain are on the opposite sides of the same ridge, and consequently have weather the inverse one of the other. This was the halting-place, and, as it were, the charmed line across which the vapors did not pass, to mingle and confound the foul, or at least the changeable weather of one side with the applauded serenity of the other. In the present state of meteorology, explanations are sometimes little more than attempts at theory; still thus much seems obvious, that vapor brought by the westerly monsoon, is condensed by the loss of heat from its appulse upon the mountains, and falls, in great part, upon the windward side; while the

sheltered wing or bosom is left in possession of its warmth without the intermixture of foreign vapor, and the electrical changes which such intermixtures may occasion.

Bontain is seated near the nook of a far-withdrawing indentation in the coast, as we remarked before, where the land from the east point climbs by an easy, but varied ascent into a magnificent amphitheatre of mountain. The house of the Resident is surrounded by a moat, and the gateway is guarded by a few cannon placed at the entrance. But with the exception of these instruments of destruction, every thing wears the garb of peace and retirement. The house is shaded by the lontar palms, and that most graceful member of the same family which bears the areca nut. The right and left were occupied by vineyards, where the vine, trained over a roofing or *jugatio* in the old Roman way, brought back to our memory the delightful things we had read in the rural works of her sons; while two standards of trees in full flower waved over you as you advanced toward the door. The fort, and the cluster of houses which good man-

ners only oblige us to call a town, are situated a short distance from the house.

In our ride to the cascade, we passed over varied slopes and elevations along a path lined on both sides with vegetation in the prime of health and loveliness. Among the rest we saw the gloriosa superba, scattering its showy blossoms over the surrounding green. The flower, composed of six long twisted rays, which spread forth in a radiant manner like what artists call a "glory," is so beautiful in its color, and so curious and unique in its figure, that the most careless observer must turn aside to look at it; and the most forgetful cannot fail to recollect, on meeting it a second time, that he has seen and admired it elsewhere. The tree, called daun sepire by the people of Macassar, so remarkable for the pale color of the leaves and the neat contour of the stem, was very common. It is from this tree that the natives of Macassar obtain the substance called canjoli, which being of a waxy and combustible nature, is kneaded up into balls, with cotton to serve as the pabulum for candlelight. The jatropha, curcas, or jarak, known by its broad green leaves and yellow fruit, was very

common here, though it seemed to have been planted, as the samples were generally ranged in lines, a circumstance that does not take place when plants and trees are sown by the hand of nature. We met with rounded masses of trap on our way, some of which had, by the oxidation of the iron, turned red, and might, upon a superficial glance, be mistaken for red sandstone. Steep and ledged escarpments are, it is well known, frequently met with in this formation. One of these drew our attention as we went along, but was too far off to be examined by a closer inspection. The face of the escarpment had undergone the change just alluded to, and was of a dark red color. After we had ridden several miles, necessity compelled us to doff our shoes and hose, and wade along the stream for a mile and a half, which was a severe trial for my feet, for they had not been hardened by exposure in boyhood, as in the case of my companions. The pain occasioned by treading upon hard stones and climbing over rude lumps of trap was so great, that the perspiration ran down in streams, though the atmosphere was very cold; and I thought the pleasure of seeing the "vater-fall,"

as the Dutchmen call it, had been purchased at the expense of too much suffering. But as we always remember the pleasure of our adventures, and forget all the sorrow and hardship, I am glad that I did not miss the sight of so great a curiosity.

Every fifth day, betimes in the morning, the natives may be seen hastening from the east and west along the beach towards a clean spot near the inner bight of the bay, carrying parcels of foreign goods and the produce of the soil, with a few works of art, chiefly of domestic manufacture. The principal part of their foreign wares consisted of Madras handkerchiefs, copper dishes and urns, with perforated edges, from Java, and a small quantity of unbleached cotton from Salayer. Those partly of foreign and partly of domestic manufacture were the large red purses which the people of these parts are fond of wearing in front. They are made of cloth, and shaped like the head of the hammer-headed shark. These articles were looked at by the spectators with great interest. I saw one man in particular holding this showy ornament in the customary position, as if he wished to ascertain the ef-

fect it would have when worn, and consequently its suitability to the wearer. A correspondence between the different articles of dress, in point of age or beauty, is of no consequence; the rusty parts seem to be used as a foil to set off the newer and more sightly. Among the articles of domestic manufacture, I can recollect only a little basket, with the top and bottom sliding into each other like a cigar-case, and a little tray of the same workmanship, made, I suppose, of the Nipah palm leaves when young, rent into narrow strips, and interwoven like the Indian mats. I was concerned to see so little that indicated a taste for ingenious performance, and looked from side to side to find and purchase better tokens of the people, but found none.

The sirih, or leaf chewed with the betel nut, was spread forth in many a leafy pile; and if one may judge from the size and color of the leaf, it was of the "first quality."

Rice was to be seen in here and there a panier or mat-wrought basket. The mode of measuring showed the low condition of the people, and a wonderful deficiency in the spirit of improvement; for it was dealt out to the buyers, with a

dish made out of a cocoa-nut shell, whose standard for size was not fetched from any considerations about the pendulum, or an arc of the meridian, or from any cubit or measure laid up in the exchequer of a native prince; but from the generous or niggardly disposition of the seller's heart. Time is meted out sometimes in the communications of the Malayan tribes by the space that is occupied in boiling a pot of rice or in chewing a leaf of betel; so here the staple article of diet is measured by the vague and undefined capacity of a cocoa-nut shell. The uniform processes of nature afforded to men with better heads and purer hearts measures of time after the ordination of our kind benefactor; but these men, whose God is their belly, never seem to have raised their thoughts beyond the base respects of fleshly gratification. Discontent, occasioned by such a rude mode of dealing out vendibles, is, as one might guess, of frequent example; a woman while I stood by, found fault with the measure, and went to the next dealer, who seemed more willing to please.

Lime, the favorite medium for extracting all virtues, was offered for sale, and, to do them justice, it was of the most snowy whiteness. It is

smeared upon the sirih leaf to draw forth the taste, and mixed up with the pounded and macerated dyeing stuffs to fetch out the color. At almost every shop in Macassar you might see some kind of bark, flower, or fruit, for dyeing; so here, in the scanty supplies of the Bontain market, you meet with the bark of a tree and its root, the former called bencori and the latter ropis, both from the island of Bonton; specimens of which I purchased, not to dye my garment "merah," or red, but to assist my recollection. I was struck with the size and beauty of the young bambu shoots, which were of a pink color, and so large that one would have filled a vegetable dish by itself. The betel nut or pinang was small, and in scanty supplies; this does not seem to be a region that pleases this palm, those I saw growing were small, and looked sickly.

The peculiar scissors for cutting the nut, and some knives of the wonted shape, were the only articles of cutlery that I met with. I bought a bundle of green mangoes for a "doight" or pais, which ripened as they lay upon my table. Not less than a thousand persons frequent this market, often for pleasure as well as business. I

looked to see whether one sort of goods came along one divergence of the beach and another sort along the other, in order to draw some inference about the mutual exchange of conveniences between people that lived at a distance from each other; when, however, I saw bambu shoots returning the same way that they had come, I gave up my theory in despair, and thought that a man might carry a bunch of them to sell to his next neighbor at the distance of three or four miles from their home. But there is nothing laughable in this, for nature has implanted in us a fondness for *cœtus* et *celebrationes*, as Tully remarks in his "Offices;" so that a man does not scruple to trudge a few weary miles, that he may behold and converse with a company of his fellow-creatures, and in such a celebratio or assembly sell his goods to the highest bidder, though he might have disposed of them at as good a price by walking only a few yards from his own door. In speaking of vegetables, I might just mention that the potatoes, *solanum tuberosum*, not the *convolvulus batatas*, or sweet potatoe, cultivated at Bontain, may be compared to any in the world for their excellence. A loose, pulveru-

lent soil, such as trappean rocks generally afford, and a sunny exposure on the side of a mountain, are circumstances highly favorable to the growth of this useful article of diet.

They are said to speak a different language, probably a dialectical variation of Macassar peculiar to Bontain. They have the broad face, the flat expanded nose, and the wide mouth of the Macassars. I fancied, however, I could perceive a difference in this respect, or, if you please, a deficiency, as these marks were not so obvious as in many that I had seen at Macassar. The skin, too, had not so much of that peculiar ruddiness that distinguishes the complexion of a Macassar man from the Bugis, Malays, Javanese, and the others about him. Their stature is about the same; if there exists any difference as to height, it is in favor of the people at Bontain. Of their ingenuity we saw but little proof, the best specimen was a basket for catching fish, which I could not purchase, as I had not a rupee in my pocket, the price demanded for a small piece of wicker-work. It was of a firkin shape, and admitted the fish at one end by a cone, upon the principle of the mouse trap. But here are, if pos-

sible, fewer incentives to exertion than there are at Macassar; for what man will labor and sweat when no inducement is set before him, and the love of ease soothes him to idleness without a single rival? Should it please God to remove from them that burden of European oppression that incumbers every disposition to activity, a sphere would be open for industrious effort, and missionaries and teachers might then endeavor to turn the nascent attempts at life, social and political life, in the best direction. The Dutch are not wholly impregnable to the assaults of public opinion, let the love of interest be as strong as it will. They amuse themselves by thinking that nothing can be done in some places, and that they have themselves made provision for the rest. A few statements, sent abroad under a warranty that will secure them many readers among those who make the greatest stir in the opinions and feelings of men will do much. When I speak of a warranty, I mean that which arises from the character of an individual who travels for no other object but to accumulate materials for science, and to dispense knowledge and the sentiments of humanity wherever he goes.

I asked a Bugis merchant if he could read; he said no, and referred me to some in the Kampong who could; but I did not allow myself time to investigate the subject, and am fearful that a single reading man would have made up the sum of scholarship in the place referred to. Where there are no books, and manuscripts are dear, how is it to be expected that many readers will be found? Before a man can read, he does not feel the value of a manuscript, even if the employment of a little industrious zeal be sufficient to procure it for him. To produce readers, we must disperse books among the people, that they may at once have both the means and the inducement within their reach. Manuscripts will continue to be scarce among them, and consequently a great dearth of readers, were it only for this reason—that to copy one, requires a certain degree of scholarship, of which only here and there one is master; while very few will be tempted by the hope of gain to learn the art of writing to supply the deficiency. Their wants are few; and hence they might serve as models of wisdom and self-government, among philosophers who forget that the gratification of an enlightened curiosity, the

possession of a piece of refinement, or the enjoyment of any thing called a luxury, affords more pleasure in the space of one hour than the bare eating and drinking do in a whole year. When a man can forego the gratifications of the appetite, because his mind and heart are held with nobler engagements, it is a mark of true greatness; but when the unlettered do not covet these things, because they have no experience of, or have cultivated no relish for them, it is the sign of a soul that is verging down towards the creatures which God has put beneath us. Improvements in cookery, furniture, dress, and the whole circle of handicrafts, have been co-ordinate with and invariably parts or attendants of each other; and wherever in a nation there is a deficiency in one, there is some defect in the other. The arts of luxury have continued to thrive after the sciences of philosophy had seen their prime; but a possession of some of the comforts and elegancies of life will always give birth to an intellectual advancement of some kind or other.

In the face of the view which I take of the moral and intellectual condition of the people, I cannot help thinking the missionary who under-

stands his business would find employment here, both in teaching the young and in talking to those that were of riper years. Learners would not be wanting when the Bugis character commended the book, while there would be methods to gain an ascendency over the mind and a place in the heart of many. Patience would be needed in order to clear the ground, subdue the soil, and sow the seed; but no opposition would be encountered of a serious kind, provided the missionary had the licence of the Dutch Government. I take this opportunity to record a petition in behalf of this people, that God may shortly open the doors and smooth the path of truth towards them; that even here a people to show forth his praise may spring up.

All of us who landed shared the hospitality of the resident Veter, a person who bore strong marks of native origin; but these marks, though they flatten the nose, enlarge the features, and darken the skin, are not incompatible with a sightliness of person. His partner, a native, showed much kind anxiety about the welfare of our weak companion, Mr. Wolfe.

The scenery of Bontain is of a magnificent

description, owing to the height of the mountains, their grouping, and the deep but varied tints of their clothing. There is a small extent of alluvium at the extreme nook of the indentation extending to the eastward, and then descending into a black beach that wears a dress of grass and rushes. Of the former, the spinifex makes the greatest figure as you go towards the waterfall, while the latter occupies some of the swamps between the resident's dwelling and the Kampong, not far from which the fort makes a humble and unwarlike figure. This rush was of the scirpus genus, but I forgot to take a bit, though it differed little from the common sort in England. I compared the figure of the mountains to a Chinese barrow, which, I am told, is intended to be an imitation of an armed chair, the seat corresponding to the harbor, and the back and sides to the amphiteatre of hilly elevation.

I forgot to mention two palm trees which appeared very singular at first sight, for, instead of the fronds, you had a head composed of bare branches, divided into a multitude of lesser ramifications. These, upon a little consideration,

you find to be flowering branches, probably of the male kind, which had thus taken possession of the top. I apprehend that every one of these has a frond at its base, of which it is, according to general analogy, the nursling or peculiar development, differing, however, in *a greater elongation* from many of the same family. One of the fronds of the fan kind was still adherent to the lower part of this flowering tuft. The stem was thick, finely ringed, and of a darkish color. These we saw while sheltering in our excursion to kill monkeys, of whom we found none. Two or three kinds, of a large size and without tails, had been seen in our journey to the waterfall, which tempted us to set forth on a rainy morning in quest of this kind of chase. I was very anxious to see them within a shorter distance, as their figure was new to my eye, and puzzled me to find a place for them in the systems of nomenclature.

The bats are of the same kind as that curious one which I found in Beechy's expedition at the Bonin Islands. They live in society about one spot, where two or three tamarind trees afford them a lodging. From these they hang in crowds, rank and file, uttering a loud noise in

concert. Their color is black with a mixture of gray, and at a certain age with a brown patch upon the nape of the neck. Their head is shaped like that of a dog, with spiral nostrils, and an eye and mien that bespeaks compassion. When first caught, they endeavored to bite, but they soon exchange their fierceness for a temper of meekness and resignation. A single shot brought several to the ground, and among them a mother and her young one. She was wounded, but not mortally, while the young one lodged under her wing, and seemed as if doubled up in a fold of it. Though they are sightless creatures by day, yet scent directed it in the choice of its mother, to whose breast it continued to hang long after her death. This was a pitiful sight, but pity does not form any item in the composition of either a sportsman or a naturalist. I put one alive into a bottle of spirits, but did not attempt to skin any, as having no place proper for keeping such things. The pupil did not shut up like the individual of Bonin, nor did it contract on holding any object near the eye, but light seems to render them either quite blind, or so dim-sighted that they cannot discriminate

objects that are near them; for when a stick was brandished near the eye, the animal did not attempt to elude the threatened blow, though it made every effort to escape when laid hold of. I suppose their food is principally tamarinds, though I made no inquiries respecting this point. They pour forth at eventide in great numbers, and resemble a crow upon the wing, both in motion and size; the tongue is thick and long, and thus well fitted for extracting the juices of fruit.

Our passage from Bounthain towards Ternate, round the southern and eastern side of the Celebes, was slow and tedious, as the prevailing tenor of the weather is merely an interchange of calms and light winds. The currents hindered our progress not a little, which, during the N. E. monsoon, runs more or less from north to south. But when the heart is at ease, a traveller may find something to enlarge his experience, whether he be at sea or on shore. If he cannot inspect the productions of the land, he can take a sketch of its contour, which he will often find to be very peculiar, and such perhaps as bears some relation to the structure of the work upon which that form is constructed. As we passed the is-

lands of Salayer, Booton, and the Hula groups, we took outlines of the coast to fix an idea of its shape in our memories, and with the view of enabling us to tell by a comparison and analogy the nature of a rock merely from its shape when seen at a distance. Many parts of the island of Booton are very note-worthy in this respect; for the two sides of a prismatic hill, known by navigators as the southernmost point of Middle island, appear as if they had been cut into a flight of stairs, by which, as one from distant ken would be tempted to imagine, its height might be climbed with the greatest ease. This form, interesting even in the small sketch I have of it, is owing, I suppose, to the trap or volcanic rock, which prevails in this part of the Archipelago. In parts of the island where the steps had not the same hard and artificial form, something like it might be seen in the jutting eminences that strewed the side of the mountain from its base to the summit. Sometimes these prominences seemed to be connected in a horizontal manner with steps, which in one place at least were broad enough to be the site of a village. One of them we could just discern with the naked eye as, on March 11th, we

glided softly by it, while the glass showed us many dwellings under the shade of a grove of palm trees. A cluster of houses, at so great a height upon the steep declivity of a mountain, might be compared to the nest of the sand-martin, or the swallow, so famed for its edible "procreant cradle," which select the sides of a cliff for the abode and nurture of their future progeny.

When land is too far off for contemplation, we turn our eyes towards the sky, and endeavor to find a lesson in the form and texture of what in the book of Job are called, with equal truth and beauty, the bottles of heaven.* On the 12th of March, between three and four in the afternoon, a dark cloud was observed rising, which the eye bent into a mighty arch; peals of thunder were heard, but no lightning was seen. The arch was lined below with various pendent fringes, which composed the sides of what resembled deep caverns in the gloomy mass. It was instructive to mark the process of disintegration as these fringes

* In the Arabic version the original is rendered by a word signifying melody, since a bottle, and a certain appendage to the musical pipe among the Hebrews, being of the same form and material, were denoted by a common name.

fell off and passed into rain, following it would seem the electrical changes that were taking place. On the day after a cloud arose about six in the morning from the north, and gave us another opportunity of watching a similar phenomenon in the breaking up of its texture as the changes in the electrical state went on. Above the gloomy vault *formed by the cloud*, were several loose particles, which continued for some time to let fall fragments of vapor as the lightning flashed from the midst of them. This would suggest to us in very easy and obvious terms, that the form and texture of a cloud is dependent upon the agency of the electrical laws, had we no other proofs and experiments to lead us to the same conclusion. It is not often that we have a chance of seeing the process so much in detail, and noting it step by step, which is the reason why I mention it in this place. On Sundays the mind often wanders to better scenes at home, or muses on that happy state of things when all men shall acknowledge the Lord of the Sabbath. What a Lord's day, thought I, will that be, when from the rising of the sun unto the going down of the same, a pure incense shall be

offered up by successive choirs of worshippers, and the theme of praise be taken up as the sun advances in his journey, by one assembly after another, like as it fared in some of the sacred sports when two lines of Athenian youths, mounted on horseback, passed a lighted torch from hand to hand in zealous competition. This custom is alluded to by Plato in his Republic near the beginning, and was often the subject of simile and comparison; we therefore do not strain it too much in applying it to that enlargement of religious worship when the accents of prayer and praise, the reading and exposition of God's word, shall mingle in one unbroken strain, and by the space of twenty-four hours cease not to echo from the earth.

On March 21st, the islands of Ternate and Tidore were in sight, and rose in exactly conical forms above the horizon. The shape is so perfect and remarkable, that they can never be mistaken by a navigator coming from the southward, especially as two other islands of the same form, and at equal distances, help to compose an arc of that circle which the eye describes for itself upon the horizon. We more than once expressed our

surprise that no reference had been made to this singularity by any of our predecessors within the reach of consultation. On the 24th we made towards the open space between Ternate and Tidore with a faint and languishing breeze; but by degrees approached the islands, which are clothed with vegetation to their summits, while the smooth form is broken by sharp ridges, which, like so many coins of vantage or buttresses, run from the base to the pointed summit; and thus compose a series of hills and dells that seem to support and beautify the mountain. On Ternate there is a profusion of cocoa-nut and other palms, which appear in large clumps a great height above the level of the sea. The top is often surrounded by a ruff of clouds, which takes nothing away from the beauty of the whole effect. We entered by a channel which is formed by Ternate and a small island lying between it and Tidore, into a magnificent harbor, having on its longest side the lovely hills of Gilolo, while the others are fenced by the islands just mentioned. In this basin the temperature becomes high towards noon, but you have scarcely begun to feel the inconvenience before a wind blows from the

northern as well as the southern entrance so strong and so refreshing as to relieve the burden of noontide heat entirely. The wind sweeps round the island of Ternate into the harbor by two currents, so that it is no uncommon thing to see a ship entering with a strong northerly breeze, when on a sudden her sails are taken aback by one from the opposite point of the compass. The air within the harbor is heated and rarified at noon, which makes way for the rushing in of the more distant columns; and thus the warmth, when verging to excess, is made to be the means of its own refrigeration.

We anchored in eighteen fathoms water, on the afternoon of March 25, about three o'clock in the afternoon.

The islands of Ternate and Tidore, with that of Gilolo, compose the semblance of a magnificent harbor; and though it wants the noble background that is presented by the Los Organos at Rio Janeiro, yet it forms the best counterpart to the sublime scenery which surrounds that haven that I have seen. The appearance of the dwellings has an air of neatness and comfort about it; while a neat bambu roofing, and a pasar well

garnished with fruit, seem to indicate that the people are not altogether dead to their wants and conveniences. I inquired if any English resided here, and was pointed to a neat building in the Chinese kampong as the house of an English gentleman. I knocked at the door, which after a few seconds opened, and within a short space after a sightly person, with the manners and address peculiar to those lands where men learn to be free without being impertinent, and courteous without servility, appeared. I accosted him by saying, that being myself an Englishman, and learning that one resided hard by, I had made bold to knock at his door. He told us, however, in very good English, that he was not; but had received a part of his education near London. Herein was "heaven ordinant," for we found afterwards that, with the exception of the gover nor, he was the most influential person in the place, and one whom the governor sent for to consult and to converse with us the same evening.

We learned, in conversation, that one half of Gilolo, with the Sooloo islands and a portion of Celebes, belong to the Sultan of Ternate; while

the rest of Gilolo appertains to the Sultan of Tidore, who resides upon the opposite side of the harbor within sight of the town. The northern parts of the domain of the Sultan of Ternate are but thinly peopled with inhabitants that are heathen. One hinted, in conversation, that it was his interest to keep them so. The people of the southern portion are Mohammedans. In Ternate, Islamism has a strong-hold, as some of the Prophet's descendants reside here, and add form to proselytism by considerations of their pedigree. The people of the Hylla islands are Mohammedans, and use a language peculiar to themselves, as do also those at Batchian. In Tidore there are six different dialects, but so similar, that the natives of remote quarters can easily understand each other. The Dutch missionary Koffner tells us that the Alfoors use the same language. In all the natives the hair is straight, but in the Papuans and the inhabitants of the isles of the north of Papua, it is crisp. We saw some of them near the pasar; they are a sort of half-way between Malay and Ethiopic.

Horace tells us that the old Romans were prodigal in temple decorations, but parsimonious

in the embellishment of private dwellings; so here we find the house of God swept and garnished, while the billiard table is the only thing that complains of neglect. Of rude workmanship and without garniture, it looks as if it languished for the favorable regards of the Governor, but languished in vain. Far different usage has the church met at his hand. Its ceiling was replaced by one of wainscot, and its walls were put into the neatest apparel of whiteness. Its form is that of an unequal-sided hexagon, and its structure, like the Dutch edifices in general, of solid and somewhat massy workmanship. A line of benching, with a rampart frontage, extends along the walls of the longer sides; while a tier of three covered seats occupy each of the lower sides near the pulpit; these are destined for the Resident and foreigners connected with the Government, while the lateral ones are used by the officers of the troops stationed here. Amidst these gilded personages I was kindly invited to take my seat. The females are accommodated with chairs, and fill, and I may say ornament, the centre of the building. Their number amounted to about fifty; few of them can fully

understand the language of the preacher, or join in the devotions of prayer; but there is something beautiful in the outward forms of worship, especially when waited upon by that manly decency which alone pertains to the Christian religion. One is ready at the first view to say with the poet,

> " Peace be within this sacred place,
> And oy a constant guest;
> With holy gifts and heavenly grace
> Be her attendants blest.

Their conduct for stillness and attention might be taken as a model, nor did there seem any thing inappropriate, though novel to me, in the custom of spreading the fan before their faces when they stood up during prayer. All are provided with psalms running beneath the staves that contain the notes marking the melody to be sung; and all join in this department of the service with good effect, as they have learned to sing as a part of the school exercises.

The German missionary delivered an address from 1 Tim. 2. 26, whereof the subject was said to be good but the delivery rather effeminate.

In a group of females, the eye expert in detect-

ing peculiarities of lineament, could not choose but to feel an interest in tracing the characteristics of each variety, either as they stood alone or were blended together in several proportions. The large head, small features, and olive-tinted complexion bespoke an affinity with the Chinese or Mongolian; the brown skin, and large and rounded feature, indicated some connection with the Malays, or rather with the inhabitants of the Indian Archipelago generally; while the intelligent "*favor*" and the melting whiteness showed that the Caucassian variety had imparted some of its beauties to the wearers. A small quantity of material with high elaborations, or a small mass of frame-work highly and variously wrought, are characteristic of the Caucasian. The marked distinction of feature, with a shading of mental expression, belong to that admireddivision; while the size, slight moulding, and large vacancies invariably denote the face of a Mongolian. How convincing are the proofs in favor of the fundamental principles assumed by physiognomists, namely, the connection between the mind and the countenance, when we see a universal superiority of intelligence joined

to features of greater development and a higher finish.

During our stay at the island, we devoted one day to an excursion to the volcano; and setting off from the brig very early in the morning, we reached the shore before the clock tolled four, but a mistake about the "needments" delayed the moment of starting till five. At first the ascent was easy, in a smooth but narrow track, so straight that the feet of a European, who steps like a freeman and not as if his shackles had just been knocked off, finds it difficult to wend his way and keep the path at the same time. By the time that we had reached the summer-house of the Sultan, a distance of two miles, some of our party gave up, and left us to pursue our journey with less incumbrance. There is one advantage in expeditions of this kind—that the superfluous parts soon wear off, while the essential find themselves at liberty to make researches together, and to push their inquiries as far as they please. We took some refreshments at a house belonging to the Sultan after we had taken a small taste of climbing. In many places the ascent is very steep, so that the breath fails and

the knees ache as if their sinews would part asunder. Screened from the fanning of any breeze, the natural exhalations of the body condense upon its surface, and distil almost in streams of sweat. Several objects among the cellular classes of botany—such as marchantia, ferns, and mosses—interested my attention and delayed my steps. The marchantia covers the river or perpendicular part of the stairs, like a rich carpet of the softest green. The thecæ, orsmall heads that stand above the carpet, are round, with small lobes, which are in their turn also minutely scolloped. The upper and under sides are covered with a brown pubescence. Upon the frond this pubescence forms a kind of net-work, that might, upon a superficial view, be taken for anastomosing vessels. This I hope to find a new species. The ferns and mosses that beguiled the labor of this journey I have not, as yet, looked at; but as this is a department of botany but little studied by those who traverse the tropical regions, they are doubtless interesting, both in themselves and from their geographical relations. As we draw near the top, the trees and shrubs decrease by degrees, till we find ourselves within two high walls, composed of

grass that rears its soft-flowing clusters nearly twenty feet above the root. It belongs to the sugar-cane division of grasses. The flower is surrounded by a fine ruff or involution of silky hairs; the glumes are purple without awns; the chaff is diverse, one very small, the other terminating in a long bristle. The florets are in pairs, the stalk of one being twice the length of the other.

The path that is floored with the falling stems of this grass is very slippery, which greatly enhanced the labor of ascending. At last we gained the summit, but instead of being upon the edge of a volcano, we beheld a ruinous peak at a distance, whose steep and rugged side forbade our further progress. After a little rest and refreshment, we descended into a shady valley, mounted a ridge that lay between us, and then, amidst sharp stones, went down in a slanting direction, that we might climb the peak by a side which seemed less precipitous. In process of time we reached the summit, and our attendants, who had labored to turn us back, began to praise our address. We beheld now a dreadful rent yawning beneath us, and lying between two

peaks, on one of which we stood, the other nearly in an opposite region. An explosion seems to have carried away the summit of the mountain, and the action taking place in a somewhat oblique direction, threw up the peak on which we stood, and covered the hither side with fragments of rifted rock. The operation must have been of the most terrible, and, to the undismayed beholder, of the sublimest kind. The crater is an inverted pyramid, its bottom is filled with water, and smoke or vapor issues in a perpetual stream. On the opposite side, not far from the top, the same fumy exhalations ascended in semblance of a cloud, and might easily be confounded with it. It was altogether a tremendous scene of desolation, for which we find no parallel in the ordinary walks of nature. I took a flying sketch of the crater, and selected specimens from the varieties of rocky formation that lay scattered around us in the wildest confusion. After we had seen all we could see, tired the patience and assuaged the hunger of the timorous of our party, we descended by the steepest part, because it was the shortest; and at length, reaching the valley with broken shins and weary knees,

we sat down to divide our small amount of viaticum among our companions, and to change our stockings. Thence, when I turned my eyes towards the summit, I can truly say I marvelled at our hardihood, for the slope seemed perpendicular. I said to my companions, "Well, if the danger had appeared as great at the top as it does now at the bottom, I should never have ventured to descend in the face of such evident peril." I still looked upon our return with apprehensions, thinking that the natives would beat me in descending, and my fellow-traveller gain upon me in the "second heat;" but I was mistaken, for exercise had made me gay and vigorous, and I found plenty of time to botanise, while he steered his way with all the steadiness of old time. We had in all a train of thirty-five natives, of which only a few could keep pace with us, and the most active turned out of the way when they heard the writer coming after them, running where it was smooth, and leaping down such places as were too steep to be descended without difficulty. A gentleman, admired for his activity, had returned by seven in the evening; but we were down a little after three, and should have

reached town an hour earlier but for the foolish bearer of my hammer, who lost his charge, and, sad to remember, found it not again.

In all volcanoes we do not find streams of lava that have issued from their crater. In Stromboli, for example, Spalanzani could see the melted matter rise and descend like water in a boiling cauldron, but it did not rise high enough to overflow the sides. At times it rose rapidly, and when the surface had reached within thirty feet of the edges of the crater, an explosion took place like a short clap of thunder, and at the same moment a portion of the lava was hurled with inconceivable swiftness into the air, and instantaneously separated into numerous fragments. In the volcano of Ternate we find no traces of any liquid streams; the parts of the mountain were thrown off in the general explosion, and were afterwards followed by masses of stone more or less in a state of fusion. It does not appear that lava is a substance *sui generis*, but merely rock in a melted state, through the prodigious heat in the bowels of the earth. Volcanoes are generally in the neighborhood of the sea, and they occur in mountains of a peculiar

form, sharp and conical, as if centuries before an eruption takes place an explosive influence from beneath, aided perhaps by water coming in contact with the fire below, had exerted its force in a circumscribed direction, nearly perpendicular to the horizon. In the island of Gilolo we saw many such peaks, and only one had been subject to an eruption, which had made a gap near the summit. This had a very remarkable appearance, and one of our number imagined that a cloud was hanging upon it; but finding that for several hours it did not alter its figure, he changed his opinion, and agreed with me that it was the result of a volcanic action. It has occurred to me to ask whether the sides of such mountains were sensibly heated by the subterranean fires within them. Whether this was ever the case, we cannot tell with certainty; perhaps, at present they are so cool as to occasion a frequent deposition of vapor, which surrounds them like a beautiful ruff. This we know, that they are situated in the most fertile spots in the world, which is due to the nature of the soil, produced by trap rock, and the shade and moisture which their cloudy garb affords to every thing that

grows in it. At distant periods they appear in all the majesty of terror, but fill up the intervals with smiles so auspicious, that health and beauty are poured forth in one unbounded tide around them.

Pindar, in the first Pythian ode, gives a sublime description of an explosion from mount Etna:

"Forth from her inmost caverns urge their way
Fountains of pure and unapproached fire,
Rivers of smoke that blot the face of day,
And from their source of lurid flame aspire.
But flashes of bright hue illume
The horrors of nocturnal gloom;
And hurl the rocks with thundering sound,
Whelm'd in the watery gulf profound.
The restless monster from his burning seat
Sends up to heaven the springs of direst heat;
And strikes with mute surprise their eye and ear
Who see the wondrous fire, and sounds prodigious hear."

WHEELWRIGHT.

And in the next stanza alludes to the fertility of this very mountain:

"This mountain's guard, whose lofty brow
O'erlooks the fruitful land below."

WHEELWRIGHT.

The whole mountain, nay, the whole island,

seems to be composed of trap, of a dark color and of various degrees of hardness. Among the fragments we find rounded pebbles of red clay, stained, as I suppose, from the oxide of iron. These, I suppose, are pieces of the rock in a state of decomposition. These, it must be observed, were also found at the base of the mountain. Broken pieces of stone, which seemed to be crystals of hyalite in a cement of ferruginous clay, were found near the summit; of these I have specimens. It was curious and instructive to remark the various degrees of heat that the scattered mass had undergone; some completely fused, others with their exterior only gathered up into ragged vesicles, while others had been merely split asunder from the effects of the fire, while the rest were unchanged. If we suppose that bituminous and other combustible elements are set on fire in the bowels of the earth, those portions of the rock subject to its immediate action would be fused, the heated portions split asunder, while those as yet unheated might be thrown from their beds in the general eruption. On the side of the island to which the volcanic jet was directed, we found two large piles of rocky frag-

ments exhibiting the same varieties of fusion and heat, while the slope of the mountain is covered with fragments of stone. The arrangement of these piles, being in a line nearly perpendicular to the line of exit, added to their vast dimensions; which induced a Dutch professor to think them of another origin. But there are no traces of any rift, no elevation of the strata, neither hard by nor in the sides of the mountain. Tradition says that they were thrown from the crater, which I believe is correct. A general trembling or quaking of the whole island may have assisted them in gaining their places, and perhaps shaken them into the lines in which they now stand; just as the knocking upon a floor covered with sand raises the loose material into ridges. Motion is propagated in waves through the continuity of solid substances, in lines of elevation and depression; an axiom in mathematics that has, in some cases of earthquake, been made evident to the sense, when the surface of the earth rose and fell like the sea when agitated by the wind. It is easy to conceive that the fragments would quit the rising swathes, and fall back upon the depressed portions, and would thus be huddled

together into ramparts of rugged ruin and desolation.

Here the kris is laid aside, which must not be regarded as a sign of any superior advancement in civilization or the kindly influence of protecting laws, but as a proof that oppression has completed her work. Their own chiefs, hired to destroy every thing that could incite them to industry, or encourage them to place any reliance in their own resources, have rooted out every feeling of independence. The spice trees, that grow upon these lovely isles, might have been at once the wealth and the glory of the inhabitants. Visitors would have come from all parts of the earth, and brought with them the choicest productions of art and the flowers of every useful science. The skill and efforts of man would have come to the aid of nature, that would in lapse of time have converted the Moluccas into so many gardens of spicery, and all the world might have been abundantly supplied with its aromatic stores. On the contrary, the most insatiate of all execrable lusts, avarice, in conjunction with cunning, bought the rulers of the people, and made them act the part of free-booters

towards those whom it was their highest duty to protect. We have, in consequence of this treatment, a poor people, without spirit and without resources. They procure their livelihood by fishing, or by tending upon those trees that yield fruit for the market. The cultivation of the sugar-cane and the jagoon, or maize, forms a part of their employment. Harmless, quiet, and submissive is the general character of the poor. The little trade done here is chiefly in the hands of the Chinese and other foreigners. The natives want both means and enterprise to fit them for such avocations. The laborer's wages is twenty-six cents per diem, which is sufficient to buy them a few lumps of sago, prepared from the farinaceous substance lodged in the trunk of a beautiful kind of palm, and a bit of dried or fresh fish. The trunk of a palm is composed of certain bundles of fibres, and a cellular substance lying between them and filling up their interstices. In the sago palm, or rumbia, this cellular substance contains a very large proportion of farina or meal, which the natives separate from the rest by pounding, maceration, and repeated siftings. It is made into square cakes, which have a dull

whitish color, with a shade of purple, and a dry and husky taste in the eating. Hunger, however, the best of all sauces, would render them acceptable in the absence of better fare; and a bit of cheese, or some other tasteful condiment, would make them serve well enough for the usually concise repast of a traveller. The petty chief, who commanded the men that the Sultan sent to prepare our way and bear us company up the mountain, said he was not *learned* in eating such fare, so begged a morsel of biscuit from the white man's wallet. The Sultan had dispatched three or four caterers, with large baskets on their back filled with sago cakes and dried fish, who met us as we were descending. Our hungry companions then fell to it with great eagerness, dealt out the whole among themselves in equal portions, and, after they had appeased the cravings of nature, rolled up the rest in their clothes, and followed their own masters. These sago cakes came from Bachian, an island a short distance from Ternate, and of the same conical form. We had little of it in the West, but it seems to surpass all the rest of the Moluccas in the richness and variety of its pro-

ducts; so that at Ternate, when you see any thing out of the common way, your query about the place of its birth generally meets with the answer, "from Bachian." The sago tree is a handsome palm of no great elevation, with a spreading top of winged leaves, and a trunk invested with the remains of the old ones. The fruit is covered with scales that point downwards like those of a fish, and is of an inverted pyramidal shape. It is fond of wet places; at Borneo we saw it by the streams, and on one occasion a large heap of the pounded trunk in the course of preparation for bread.

A little makes the people happy, for it is only prosperity and affluence that set a man upon coveting more than he has. No provision is made for their education, except by the Mohammedans, by whom they are taught to chant portions of the Koran without any knowledge of its meaning. This only applies to a few, since a school that we visited had only three scholars with tattered books in the Arabic character spread before them. The missionary who performs the duties of parson, is too much fettered by limitations to attempt any thing among the natives; so

that they have no teachers, no friends, or guides to do them any good. Under the existing dynasty no missionary of any spirit or enterprise would be allowed to exercise his sacred functions among the common people, lest religion should open their eyes to a sight of their miserable situation, and by imbuing their minds with sentiments of freedom, lead them to make some essays to throw off a yoke that now presses them to the the earth. In what an aspect does it place the doctrine of the divine right of kings, when we see a monarch, for the sake of a little filthy lucre, shutting the kingdom of heaven upon the heathen. Of such it may be said, that their condemnation slumbereth not. The missionary told us, that when he attempted to do aught among them, the resident would say, "it is my duty to tell you, sir, that you are doing too much." Thus it is that men are compelled, in spite of their own better judgments, to uphold a system which will inevitably work its own ruin to the dismay and confusion of all its abettors. The Sultan of Ternati receives from the Dutch Government a pension of 14,000 rupees, as does also the Sultan of Tidore. It is assured to him and to his suc-

cessors, though by a late alteration in the Dutch policy the natives are now permitted to till the spice trees. But it is stated that they are indifferent to the licence; and no marvel, for their heart is killed by long oppression, and they know that when they have gathered their harvest the fruits must be sold to their masters only. The great incentive to labor is, the disposal, the free and unmolested disposal of it, to whom and on what terms we please. We did but little here either in bestowing books or in gaining an insight into the feelings of the natives. The Chinese were seldom seen in their stores, except at the Rumah Gagei, counting money. I conversed with a few of the better sort, who gave but an indifferent picture of the state of things among them. Wages are excessively low. The absence of the Chinese teacher was a serious loss, as he would hunt about and pick up such as might be benefitted, in a way that we could not. There were no incidents in our favor, no applications for medicine or for help, in any way that might give us a place among them. I was invited to take a glass of wine with one or two, and to enjoy the shade with another; but they

were not individuals with whom one could form an acquaintance at first sight. My pursuits excited their curiosity, and there was an end of the matter.

Books had been sent to this island for distribution among them, but none would have them; so that they were returned to the place from whence they came. Mr. Duivenbode, who lives among them, and is allied to them by matrimony, declared that it was of no use to attempt any distribution. Under circumstances so unpromising I did not think it worth incurring ridicule and a waste, by donation so unsought and so unwished for. The great inconvenience that attends Chinese books, is their size; one cannot put a part of the Bible into the pocket, to be produced only when by conversation it has been ascertained that such a gift would be acceptable. The missionary said that the Chinese did not understand the style of the Scriptures. The truth is, that they understand very little of their own language. An edition of the gospel, with Roman characters, would be understood by most of those who are engaged in commercial dealings with Europeans.

On the afternoon of March 31, we went by ap-

pointment to make a visit of courtesy to the Sultan, with the resident and Mr. Duivenbode, in the carriage of the former. As we drew nigh to his house, a ceremonious display of martial honors met the eye. Soldiers, in Dutch regimentals, with a few in native uniform, lined the path; and some chief men, in officers' accoutrements, ranged themselves in order at the foot of the stairs, while the Sultan, a man about sixty years of age, descended the long flight of steps in well-affected haste, to receive us, taking care to reach the ground just at the moment when the carriage stopped. The etiquette of a Chinese is perhaps more complex and varied, but not more exact nor absolute than that of a Malay. Any deficiency is not merely a mark of rudeness, but a gross affront; so that they show a most anxious solicitude lest their inadvertence should overlook the smallest punctilio. The salutation between himself and the resident wore the appearance of the greatest cordiality, nor have I any reason to believe that it was not real. We were conducted into a large hall, where, at the upper end, armed chairs, corresponding to the number of guests, were placed so as to form three sides

of a square; two distinguished from the rest by their embroidered cushions, for himself and his principal visitor. Tea, coffee, and cakes, with other showy matters of confectionary, were offered, in compliance with the laws of eastern hospitality. Our entertainment, however, consisted in looking at the several characters before us. The Sultan was graceful and majestic in gait and person, and his moderation and kindness of manner would lead us to feel a sincere esteem for him could we view him in any other light than a pensioner of the Dutch government. The others seemed to feel very straight-laced in their heavy uniforms, so unlike the style of their usual habiliments and the nature of the climate. A band, with numerous performers, were stationed below us, who did their best for our entertainment, and therefore we were obliged to take the will for the deed. But each man appeared to be on his own account, and to display an extemporaneous effusion without reference to any pre-concerted melody, score, or correspondence of parts. The mistake lay in their attempting to imitate European music, for, had they used their own native instruments, our curiosity would

have been highly gratified, had we met with ever so little to charm our ears. We afterwards went and viewed a small redoubt on the left of the building, and contemplated with admiration the beautiful scenery that was spread around us. We visited a small lake, or natural reservoir, that issues from a vault of clay or marl, which I could not examine without wading through the water. It was of crystal purity, and excited a desire to drink, where no thirst preexisted. The strata of clay, which had been either cut or broken through, are on one side horizontal and on the other a little declined. In the water, minute fish of pale brown, with ocellated spots of a deeper color, added life and beauty to the element. These were, perhaps, a part of the Silure and Goby families, but they were too wise to let me learn much about them. A slab of sienite was lying upon the brink, which, by the graving of Chinese characters, indicated both the workmen and the country from which it came. A Chinese temple at Macassar had its pillars of the same material, brought from its native region in more flourishing times. Its hardness, and the even distribution of its component parts, rendering it sus-

ceptible of a very fine polish. The Sultan showed us a ring on which he set a high value, as it had been brought from Arabia by some of the prophet's descendants, who sold it to him for fifty dollars. It seemed to be a piece of jasper, which imagination had likened to a lion. The ground was black, a color not very common among Egyptian pebbles; and there was a laminated diamond or rhombus in the centre, which is, perhaps, an attempt at crystallization.

The resident, on learning that we had a wish to land upon the island of Tidore, fixed a day, and wrote to the Sultan to apprize him of our intention. It was arranged that we should go in the barge belonging to the Himmaleh, as that gentleman thought it would be more respectful and more becoming to visit so great a personage under the American colors. The master of the Himmaleh, however, had previously given the seamen liberty to go ashore, and thus we lost the advantage of either making ourselves known, or gaining the knowledge of an eye-witness. Two days after he sent to ask what had befallen his new friends, saying that every thing had been put in order to receive us, and persons had been station-

ed to look out for and announce our approach. His Highness, it seems, thought it an honor to have such guests, and therefore determined that neither they, nor the flag that waved over their heads, should lack any mark of respect that he could pay them.

An afternoon was spent in visiting a lake about six or seven miles from the town in company with Mr. Duivenbode. Part of our road lay amidst enclosures, where the attempts at cultivation had been rewarded with a most bountiful increase; and part amidst jungle and tall grass, that sometimes seemed to dispute the possession of the horse's back with his rider. The lake is formed by the sinking down of a parallelogram of earth, which is about a furlong in breadth and two in length. The banks slope suddenly, but their precipitous nature is softened by the trees that clothe their sides. A narrow wall of earth divides it from the sea, through which the Portuguese endeavored to cut a channel; but when they saw that the level of the lake was higher than the level of the sea, they dropped their design. We passed through the commencement of the cut, which still remains to

tell what some by-gone generations thought to do, and found that the layers of clay dipped fifteen degrees, and thus showed that they had been affected by the abrupt descent of the ground which forms the lake. The water was sweet, and about twenty fathoms in depth. No stream of any size flows into it; and whether it is supplied by the bubbling up of any springs, I know not, but suppose that the copious rains, which often fall into it, are sufficient to make up for what is carried off by the process of evaporation. It has been thought to communicate with the ocean; but the sweetness of the water, and its height above the level of the sea, seem to protest against the truth of any such inference. When viewed from the sea it has a singular and romantic appearance; for as the eye descends from the summit of the mountain along the hills and dales that are traced in lines of various hue upon its sides, it unexpectedly sinks into a deep basin, which, from the true prismatic contour of its slope and the effects of perspective vision, looks like an inverted pyramid; while every angle and turning is softened by a wilderness of timber trees. Its wall towards the sea is a sharp ridge, which,

though a continuation of the cliff, is not like many steeps by the sea-side, bare and rugged, but, on the contrary, garnished with shrubs, plants, and trees in living green.

We met with a missionary of the Netherlands Society at Ternate, who had been laboring among the natives in one of the remoter islands, and was then fulfilling the duties of pastor to the settlement in the room of an old gentleman, whose age and long stay in hot climates had rendered this burden too heavy for him. The missionary had not many great things to tell us about the results of his self-denying sojourn among rude and half-humanized people. Mr. Dickinson obtained a few particulars from him, which in all likelihood he will communicate to the public. But the policy of the Government of Netherlands India renders it difficult, if not impossible, to do any good. In the neighborhood of a settlement every effort is made to keep all things under the strong curb of an official admonition, and at every step the missionary hears the reproof,—"It is my duty to tell you, sir, that you are going too far." And this, too, comes not from an enemy, but from his patron,

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perhaps the kindest friend he has. At a distance the preacher of the gospel finds himself in a kind of wilderness, stripped of all those moral instruments with which he may hope to work upon the feelings, the understanding, and the condition of the heathen. To accomplish any thing worthy of relation, a minister either at home or abroad must be free; for freedom is not an inseparable adjunct only, but an essential part of religion; he must not be limited in the choice of expedients by wordly wisdom, but be at full liberty to do as he pleases, that, in the apostolic sense, he may become all things to all men, that he may gain some of them.

The straits of Basilan are formed by the island of Basilan and the island of Mindanao. The former is about six miles in breadth, and, running from east to west, stretches to the length of forty miles along the southern side of the passage. It is easily recognised by the conical shape of its peak, which is a very conspicuous object as you approach it from the eastward. The inhabitants are said to be harmless, more perhaps from fear than from any innate disposition to be generous and honest. They bring

shells to Zamboanga, where, on one occasion, a Spanish officer kindly purchased some for the writer with a few cigars. The complexion of the seller was brown, his person small, and the tones of his voice subdued. There was a meekness in his air and deportment which agreed very well with the character we had heard of the rest of his countrymen. The island of Mindanao, which forms the northern side of the straits, is remarkable for its height, and consequently for the thunder and lightning that play among the mountains. The shores, on both sides diversified in form and clothed in lively green, were not without their interest; but an eagerness to get forward leads us sometimes to look with indifference upon the beauties around, and the chief attention is bestowed upon the winds and the currents. We were beating in on Saturday, April 22, with a breeze from the south-west, and the current was then in our favor. On the following day we were obliged to beat with the wind from the same quarter, the tide sometimes with and sometimes against us. This is occasioned by the varying depths of the water, and the re-action it encounters when running against

bold and abrupt shoals. If the land abound in sudden elevations, we are not surprised to find the bottom of the neighboring sea full of various depressions, inasmuch as it is merely a continuation of the same surface dipping and rising upon an inclined plane towards the greatest soundings. Near the shore the water is lined with ripples, or wrinkled into ridges and hollows in a most singular manner; and we see partial currents, as the boat advances, setting in various directions.

Zamboanga is seated in the bight on the southern side of Mindanao, not far within the south-eastern point. This point is one of the three remarkable promontories in the island. The western side is studded with Spanish settlements, but I have reason to think that it is nominally under the sway of the Sultan, who resides at the city of Mindanao. This city is built upon a river that enters the sea within the recess of the Ilano bay. The whole of the eastern coast is peopled by tribes, that, in the language of the Spaniards, are "mui mal gente," folks of a very bad sort, and have long been too well known for their love of piracy. The apprehension that we might fall in with some of these thieves and kid-

nappers made us watchful, and so much the more because calms and light winds are common in and near the straits, as they are in all situations where the warmth and cold of the neighboring land modify and control the regular breezes. Under sail with a stiff breeze, we could have set their largest armaments at defiance, but in a calm we should have no other resource than to fight for our lives and our property. We had, however, reason to be thankful that Providence spared us any such disagreeable business; and we passed through the straits without seeing anything that looked more suspicious than ourselves.

The city of Zamboanga extends about a mile along the margin of a gently withdrawing harbor; at one end we see the arsenal, and a large fortified redoubt running into the water, while the other is marked by a plain but spacious chapel. The walls are white, and the roof thatched with palm leaves in the native manner. It was, when we saw it, in the process of being fitted up for divine service. The buildings are of humble architecture, but they fringe the bottom of the green hills that rise on the left of the town, and thus, in borrowing a beauty from nature, they have, when

seen from the sea, a very pleasing effect. The reader may form a conception of the place by imagining a few hundred cottages of different sizes scattered upon one of the most agreeable beaches within his knowledge. The complexion of the people is fairer, and their countenances more interesting, than those of the Macassars or the Bugis, a circumstance which we may ascribe to cultivation, and perhaps a mixture of Caucasian blood. The Spanish gave them the credit of speaking that language with ease and correctness, and they have done wisely in teaching the natives to utter the soft-flowing sounds of the Castilian tongue, instead of endeavoring to make themselves understood in a motley combination of foreign and native idioms, put together without the slightest reference to grace and propriety. The water is much praised for its excellence, and is said to be withal a prophylactic against all kinds of disease, since it is medicated by the leaves of the sassafras, which fall into the stream on its way among the hills, and impart their wholesome property to its waves. The guava tree is very common here, as it is elsewhere within the tropics; though it yields but an indifferent fruit without care and cul-

ture, except it be in very highly favored spots. There is not a doubt in my mind as to its being a native of these regions; for we find it growing wild in the island of Celebes, Ternate, in the islands near Macao, and in Borneo Proper, where it has an appropriate name of Indian derivation. A species of mimosa, with white veined leaves coupled together in two pairs, is the most remarkable and most frequent tree in the lower grounds. The branches hang down like those of the weeping willow, and the pods of fanciful shape burst and disclose their bright red seeds to set off and beautify the green that is diffused around them. The verbenaceous shrub, with sightly yellow flowers, akin to the derodendrum that occurs on the beach at Singapore, is of a larger size, and wears a more imposing aspect than its fellows in that flourishing settlement. The little vervain-like plant, zapania nodiflora, is seen in great abundance, adorning the sides of the pathway with its small purple heads and tufted herbage. During this season of the year, which we may call winter because the rice fields are barren though the air is not cold, the wind blows from the north-eastern side of the island

towards the mountains. Or perhaps we shall speak more correctly, if we say that the winds in Mindanao are influenced by the atmospheric current that sweeps from the N. E. down the China sea from October to April, and thus all the phenomena that arise from the collision of cold and heat occur on the north-eastern parts of that island; while those on the south-western sides are sheltered by the mountains. Hence we find the alluvium on the hither sides of the hills at Zamboanga very dry; the clay is split into hungry clefts, and the borders only of the rice fields are clothed with vegetation. It is sometimes refreshed by a shower, but so rapid is the process of evaporation in these latitudes, that an occasional rain is by no means a match for it; a remark that leads us to see the *final* cause and beneficial contrivance of those long-continued and heavy rains that fall in these places. The wisdom and goodness of God is seen in thus adapting the supply of moisture to the demands that are made upon it. The unproductive aspect of the fields was relieved in some places by groups of the nipa palm, easily distinguished by the absence of a stem above ground, and the deep green of its

large pinnated leaves. The beauty of this lovely palm is not surpassed by its usefulness in the construction of native and rural dwellings. In some of the marshy spots we find an abundant growth of a large fern, distinguished by having the under surface of the leaves completely invested by minute grains of a brown color, set off by an opalescence of gold. These little grains are truly seed-vessels, composed of two hemispheres, which are held together by a jointed ring, that might be compared to a lady's necklace in miniature. Fruit is scarce at this season of the year, and consequently, with few exceptions, of an indifferent quality; which is owing more to want of forethought and application in the inhabitants, than to any defect in either the soil or the climate. The plaintain or banana, if cultivated in a sufficient quantity and variety upon a soil of a vegetable nature, and well screened from the sun, would yield a crop all the year round; as the different varieties ripen their fruit at different seasons, and thus keep up a constant supply. We met with some that were very good at the table of our hosts on shore, who entertained us with a kindness and freedom

which I had more than once admired in the Spanish character while travelling in Mexico and other places on the western coast of America. The Spanish system of cookery adapts itself much more easily to the nature of present circumstances than the English, as it consists of various compounds of meats and vegetables dressed in as many ways, and thus furnishes several courses out of a very few materials. At his table, the Spaniard always, in distant countries, retains some remembrances of his home; while the Englishman is obliged to pass, by a sudden transition, into the use of a foreign diet, without a single relic to remind him of his mother country. We spent the whole of April the 24th ashore, in looking over some of nature's repositories, and in conversing with our fellow-creatures. As we passed beside a canal, in which a stream had been taught to run parallel with the beach for the comfort and convenience of the town, we had a very interesting spectacle. In it were persons of all ages bathing their skins and washing their clothes at the same time. The morning dress is cleansed upon the person, while the spare garments and changeable suits of apparel are puri-

fied, that they may be ready for the sabbath or the feast day. Health and happiness seemed to wait upon all; while soft features, dark eyebrows, and clear complexions, conspired to beautify what we commonly, and perhaps not erroneously, deem the most lovely part of creation. The hair of the females is turned back, and gathered into a tuft behind, with a comb of humble workmanship, as a securing auxiliary to confine it in its place, though this is done by the mode in which it is fastened. It was fine, and of a jet black color, glistening in the sun, when wetted, with something like a metallic lustre. We followed another river called the Tumboanga, a short distance through the alluvial kind of marsh, in the hope of reaching the higher parts of the country, and picked up a few stones near the edge of the water, to serve as specimens of the broken fragments that compose a part of the alluvium. Pieces of trap, a compact black stone, shaded with lighter colors, some morsels of quartz, and the red conglomerate which we have always found when among the trap formation, were among the number. The last, indeed, is nothing but that rock in loose fragments undergoing a

chemical change in reference to some of their components. As the path became at length very muddy and uneven, we turned back, rather against our inclination, but we were not equipped for treading through the dirt. We saw many of the banyan or Indian fig-trees, which the natives call *asuang* and *munuk* in the Bisayan language. The trunk is neatly rounded and of a pale color, the leaves are of an ovate shape and of somewhat narrow proportions. The descending roots form a colonnade as usual, but of no very striking character. The boughs are remarkable for the number and the length of the shoots that issue in clusters out of them. Those that grow out of the under parts continue to elongate in virtue of the wonderfully prolific nature of the tree; but being compelled to abide in the shade, they never throw out leaves and branches, and strengthen themselves like their more highly favored brethren. In process of time they reach the ground, "*gravitate sua*;" and there, like all other stems in the same circumstances, they send out proper roots and fibres in quest of nutriment, and thus serve their mother in a useful, but in a less showy manner than

the other branches which enjoy the pleasing stimulus of light and fresh breezes. This is a simple, but I believe a true explanation of a circumstance that has been regarded as a phenomenon in the vegetable kingdom. We saw a species of coreopsis, with bright yellow blossoms, climbing about the trees, and garnishing them with a beauty not their own. This plant, winding about the trunk of the trees, brought to my mind the net-work upon the pillars in the temple of Solomon, though the comparison is not a very exact one. We entered the dwellings of some of the natives, and found them kind and communicative, and by no means shy or bashful. Those that come from the interior are not so fair in their complexion, nor so well-featured as the others who live in the town and its neighborhood, though we did not find them less civil and courteous than some who had enjoyed more advantages. There are seven thousand inhabitants hereabouts that have forgotten their native tongue, and have learned to speak the Spanish in all their communications with each other, as well as with their masters. One or two of them told us that their dialect was a mixture, and that

they did not understand the Spanish language when spoken to them in its purity. This, of course, differs in different individuals, and depends upon the degree of direct intercourse which they have with the officers of the settlement. If they learn the language at second hand, they will mutilate the pronunciation and falsify the grammar. If they speak often with the natives of old Spain, they learn to correct and purify their diction; for they do not address the people in a jargon that sets every rule of accidence and composition at defiance, as the Portuguese do, who, at Macao and in other places of the east, have so far corrupted their mother tongue as not to understand it when spoken as it is written. There is nothing, however, that slips out of the memory sooner than language, as I learned by experience at Zamboanga; for, not having talked with any Spaniards, nor read any of their books for ten years, I felt not a little at a loss to make myself understood the first day or two after landing, though the habit soon returned with a little practice. I ought to remark, that the officers of the settlement, among other praises bestowed on the natives, mentioned the correctness with which

they expressed themselves—a remark that applies to those who had intercourse with their betters, and who, as we have said, learnt in this way to amend and improve their style. The clouds overhung the mountains, and the thunder rolled among the recesses in one of those temporary storms which the Spanish call a torbonado. We thought it would involve us in a heavy rain, and took shelter in a cottage; but as the hills are the cause of these meteoric displays, so the effects are confined to them in a majority of instances. The fall of rain occasioned an *avenido* or freshet, so that the water overflowed the banks of the river, and made it impossible for us to pursue our route in another direction towards the heights, where we hoped to get a view of the country, and ascertain the nature of the rock that composes the base of the mountains. The rushing of the water, heard in various places, gave us a faint idea of the profusion in which the rain falls at such times. These avenidos are not uncommon, as our attendant anticipated the result of the drama that was going forward upon the distant ridges, while I, inasmuch as he was a lazy fellow, ascribed his prediction to idleness.

The interior of the western peninsula at the back of Zamboanga is inhabited by a people not savage, but indolent, who will not work because the Raja claims the monopoly of all the trade, and takes away their produce without making them the smallest compensation. The entire commerce of Mindanáo does not amount in value to more than $2,000 per annum, while that in the principal island of the Sooloo group, lying between the Philippines and Borneo, reaches $150,000. So much for the kingly prerogative of being sole buyer and seller in the market. When we consider the nature of the sway which these people are under, it ceases to be a matter of wonder that they are idle and dissolute, though they inhabit the fairest portions of the earth. It is not in the heart of man to labor, unless the results of his toil be secured to him by the protecting hand of government, the peace and general good order of society. The history of mankind, especially among the Jews, may furnish examples of men who have thriven and grown rich in the midst of danger and oppression when encouraged by the hope of escaping the notice of their persecutors ; but in these is-

lands, wealth, in the hands of a man without a high title, cannot be said to be held by a doubtful tenure; for there is a certainty of losing it with all the inconveniences with which such a loss is usually attended. He is the happiest man who has nothing to part with, nor any virtue to render him eminent. The people of these regions may be naturally dissolute and idle, but it is only the pernicious interference of the prince that can render such vices habitual and general. It is he who sets his seal and warranty upon whatsoever is evil in the human heart, by abstracting from his subject every motive that could induce him to reform his conduct or better his condition. As Christians and missionaries we mourn over the condition of the heathen; and as philosophers and philanthropists we should endeavor to find and trace the causes that have brought many of them so low; for a man is not made wicked and miserable by the fiat of the Deity, but by the tendency of those moral agencies which have been made to act upon him. Let commerce be free, property secure; let there be some to judge between man and man, and let these means have time to work; and then the Christian teacher

would find the Indians neither faithless, unkind, nor without an ear to hear and a heart to receive instruction. In the islands to the westward the natives have license to trade; but no foreigner can have any commercial dealings with them without a special permission from the Sultan of Sooloo, which is granted under the seal of the Spanish authorities at Zamboanga. The imports of Mindanáo were stated to be one-fourth in China goods, one-fourth in European commodities, and the remaining half in fruits, sugar, &c. The interior of the eastern side of this island is filled with savages called *Manabos*, who acknowledge no king or master, go without clothing, and have need of little beside a few articles of Chinese pottery, for which they exchange the native wax. Their food consists chiefly of buri, or a kind of millet.

The dwellings of the natives mostly consist of two or more stories; and in the houses of the lower orders, the ground-floor is unoccupied, and becomes a receptacle of dirt and filth. In edifices belonging to the more respectable sort, it serves for a hall; and when the person is of the army or navy, it is tenanted by a soldier. The

buildings situated at a distance from town were only of one story, covered with nipa like the rest, but without the same apparent comfort. The ridge of the roof is peculiarly sharp, as it is elongated a foot or more from the pitch; whether this is done from a reference to beauty or from motives of utility, I did not inquire; but it gives to the building a characteristic singularity. In the construction of even these poorer dwellings the inmates have a regard for the conveniences of the night, as there is generally a separate apartment furnished with an additional mat for the purposes of retirement and repose. The flooring of the second story is made of bamboos laid side by side, but not close enough to keep out the air; this defect is made up by the mat laid over it, on which they sleep. The staple articles of food with the natives are rice and Indian corn, with a little fish by way of relish. A simple fare, in which vegetables preponderate, warmth at night, and a skin purified by daily ablutions in running water, obtain for this people health and liveliness; and render them interesting to every man who has a heart open enough to admit a few rays from the genius of philanthropy.

Mr. Dickinson ascertained that there are forty Chinese living here; but his representations, which coincide with that of the Spaniards, make them very poor. They do little or nothing in the way of commerce, and seem to subsist upon the small returns of retail dealings, or earn their bread by the labor of their hands. There are a few that can read, and these have probably brought that knowledge from their mother country, since the Catholic padres forbid the setting up of schools, anxious, I suppose, to prevent the effect that a knowledge of their own literature might have in riveting them to the doctrines of heathenism. But such forced submission, backed by an obligation to turn Christian whenever they desire to be married, can have but one effect, and that is, to drive out the last remnant of the moral sense which oppression and poverty might leave in their breasts. They were much delighted to find one who knew something of their native language, and promised, with seeming interest, to come off to the vessel on the morrow, that they might get a supply of books. They live in much misery and wretchedness; their squalid dress and lank

limbs speak forth their unhappy condition in terms that cannot be easily misunderstood or overlooked. They never fulfilled their promise to come on board, either from fear that the possession of the Chinese books might draw down upon them the reproof of the church, or, what is more likely to have been the case, from an utter indifference about them.

April 25. We started, early this morning, on our way to the mountains, and after many fruitless attempts, succeeded in reaching their summits. On our way thither we entered a house where the inmates received us with much kindness, and gave themselves much uneasiness because things were not in a condition to give us a better welcome. They discouraged us from any attempt to accomplish our wishes, both on account of the difficulty of the task and our ignorance of the right path. This house looked like a grange, with all the appurtenances of farm-house and vack-yard. We learned, from the females who kept it, that this dwelling belonged to the commissary-general, into whose hands all moneys at the settlement are eventually paid. It was a pleasing residence, where on one side you

had a view of the mountain ranges, and on the other the well-wooded slopes skirted by the sea. It was, as our new friends said, a *buena vista*, a pretty landscape. Our hosts entertained us with smiles and expressions of kindness, and from what I could gather from the desultory remarks bandied about, they were puzzled to find what refreshments they could set before us. We soon took our leave with a promise of returning, and a cautionary *cuidaos*, or, take care of yourselves, from them, coupled with a dissuasion to give up our intended jaunt to the mountains.

After several fruitless attempts to advance by ourselves, we at last engaged the services of two men, who conducted us over a plateau clothed with delightful green, with here and there a tree, while the surface rises and falls in the most graceful undulations. Ever and anon the earth is upheaved with an ascending series of rounded elevations, while the lowermost of the interjacent vallies are filled with trees and shrubs in all their primitive wildness. The plain over which we were footing our way, seemed to stretch forward without limit ; so that, in order to get a view of the country, we turned aside, and pursued our

course through a shady vale, at the bottom of which a stream of water murmured over the stones that lined its channel. The carpeting which covered it was the andropagon, with but a few bents and a dense matting of leaves. We had heretofore been so accustomed to see every spot overwhelmed with trees, that a plain was a great novelty, and we began to ask how it had happened. Places of some elevation, not washed or overspread by any mixture of vegetable and alluvial deposit, and exposed to the rays of the sun, are covered with grass, an effect that is perhaps much assisted by the clay that forms the subsoil. The want of this deposit, grass, and exposure are among the causes. On the way through the shades, we saw many new trees, or such as the eye did not immediately recognize. The canella or wild cinnamon, among the rest, became an object of notice; and we gathered leaves from its branches to fill our caps, and to serve in the place of better fare; while our guides, in a barbarous manner, girdled the trunk, and stripped off the bark in rings, and thus gave a fatal stroke to the life of a beautiful tree. It was tall, with an upright stem, and a tuft of short

branches at the top: the bark was green and smooth, and the leaves smaller than those of the cinnamon bush, but nearly of the same form, with three prominent nerves. In a place near one of the summits where the rock outcropped, we obtained some fragments of it as a specimen of the strata. It was much disintegrated, so as to give but an imperfect idea of what it had once been ; still, by a comparison with the loose and rounded stones found in the groves, we learn that it is a kind of trap, which has a dark ground with minute specks of white, and numerous traces of oxide. The principal ingredient is clay, but it deserves a closer investigation. Other fragments, from their whiteness and friability appeared to be of a calcareous nature, having an uneven and earthy fracture. On the side of a hill, the grange before mentioned, a number of quartzose fragments were found, some of them passing into chalcedony; one piece was ornamented with small hollows filled with gold crystals.

We wandered a long time, and made our way sometimes in the shade of the valley, and sometimes over the brow of a hill, where the path, from disuse, was overgrown with grass taller

than ourselves. At length the thunder, heard among the distant hills, began to warn us of the coming shower, and our guides took up the strain, and told us that the *aqua* or water was at hand. Nor was it long ere these predictions were fulfilled; for the cloudy host, drawing towards the heated ridges hard by, soon let fall a deluge of rain. To get a wet skin is no great matter, but when you have to descend steep hills covered with clay and running down with water, the difficulty of walking becomes very great; the shoes are soddened with water, and at last fall off the feet from loss of tension. For many a weary furlong I trudged back with only one of mine. When we reached the grange, the doors were fastened,—the inmates having removed to the other end of the long building. Without waiting to make ourselves heard, we left the tenement, and resolved to make the best of our way towards the town ere the *avenido* or freshet should come from the hills, and render the river impassable. So away we hied, traversed the muddy waters of the river, and reached a cottage, where we solicited something to eat. At first our request was in vain, there being neth-

ing prepared; but in a short time some rice and fish were dressed, and offered to us without the convenience of knife or spoon. Necessity, however, reconciles one to many unusual things, and so we took up our food with our fingers, the kind hostess showing us the easiest mode by her example. They expressed their wonder at our humility, and said no Spaniard would thus condescend to eat rice under a peasant's roof. "Happy Zamboanga!" cried our host "had the English a place in its government; but its present lord thinks of nought else but to pocket the gold and the silver." Nations differ much in the mode of feeding themselves; the Chinese and Japanese pick up their meat with two sticks, which they manage as a tinker does a pair of nippers, the thumb and forefinger supplying the place of rivet or centre of motion; the Mexican gathers it up by means of two pieces rent off the tortilla or cake of Indian corn, and swallows his knife and fork at every morsel; while the people of which we are speaking have no other resource than the implements nature has provided for them. The last is an eastern method of great antiquity, and is alluded to by our blessed Sa-

vior in some of his last words, "He that dippeth his finger with me in the dish." In a collection of Arabic sayings which I have seen, there is one that says, "It is better to eat with a mouse, than with a man who has long nails." Near this cottage we found a mass of trap, loose and rounded, which my fellow-traveller took great pains to break, that we might carry away some of its fragments. When broken, it seemed to the inexperienced eye full of golden grains sparkling upon a whitish black ground. These grains were a kind of prismatic iron pyrites, of a pale bronze yellow, the crystals having beveled edges and striated sides. The fracture is uneven; the planes at the end are often oblique, and sometimes the four-sided prism is modified into a six-sided one. The crystals have a reddish tinge, perhaps arising from the oxidisement of the iron. The hollows or casts vacated by these crystals were tinged with a rusty red, the sulphur having been dissipated and the iron turned to oxide. In the latter instances the specimens bore marks of having been exposed to the action of the weather for a long time. We picked up at the same place pieces of a grayish white stone, tinged with red

towards the margin, and sprinkled with grains of felspar so much mutilated that their shape is doubtful. There was also a piece of potter's clay, which sticks to the tongue, and is white with a greenish shade. Among other specimens was a grayish pebble of a porous earthy nature, containing minute shining fragments of a pale yellow; and another of an argillaceous texture, with alternate layers of brown, and presenting a conchoidal fracture. Some trap rock was found, containing pores that were lined with a shell of white, resembling the habitations made by the teredo in wood, and which give the stone a very singular appearance; quartz was seen in such places as if it had been washed by the water, but we saw no strata from which the pebbles could have been derived at any recent period. On the sea-shore countless numbers of the same kind were seen, most of them of a milk-white, while a few approached to transparency, passing into a watery or marbled appearance resembling chalcedony; a bit of the same red porous stone seen at Ternate and Bontain was found, holding a few crystals of basaltine with particles of quartz and felspar interspersed.

The weather, during our stay here, was pleasant. In the morning it is calm, but in the middle of the day very sultry, especially where the light south-west wind does not reach. The wind is a sort of sea-breeze, and prevails usually until mid-day, when perchance the cloudy volume advancing from the mountains cools the atmosphere, and a breeze from the land ensues towards the latter part of the day. It is the dry season here during the north-east trade, and as the clouds first approach the other side of the mountainous range, the wet season takes place during the other monsoon. This is an idle time with most of the inhabitants, and they find little employment, save in fishing and climbing the cocoa-nut trees to obtain palm wine. The governor told me that a man can earn a real, or twelve and a half cents, in two hours, which is sufficient to maintain himself and family for the day. The shops present but few commodities beside the palm wine or a few cigars, being peculiarly void and empty. Mangoes may be obtained; to ripen this fruit, the natives kindle a fire under the tree.

Many of the children are taught to read, and

all to recite their prayers. We entered a small school, and found only a couple of scholars; but the old lady instructress showed us as many instruments of punishment, a palmetto and a thong. A little girl, whom I met on another occasion, had a manuscript book, apparently a history of our Savior; but it was some time before the bashful creature could be persuaded to read a few lines, though the trial showed that she had no reason to be ashamed. The padre is a man of vigorous health, whose countenance is illumined by gleams of good sense and good feeling. When we waited upon him respecting the interment of Mr. Wolfe, he said for his part the deceased might have a grave in the (new) campo santo, but the Romish church forbade it. This man expressed himself much pleased with our attentions, as we were with his kindness and good sense.

The population of the town is said to be seven thousand, and the number of troops five hundred. The appearance of the soldiers, who are dressed in a shirt and white trowsers, with a scarlet sash, is very sightly; and experience has proved, that under the direction of a European, they will

fight well. From the little intercourse I have had with this people, I cannot call them to mind without feelings of interest and complacency. A voice that is sweet and cheering, a smile without a shade of sorrow, an easy address without rudeness, and a kindness unmixed with hypocrisy, have made an impression that will not soon be erased from my memory. If I were asked whether I thought these things owed more to religion than to a natural goodness of heart, I should answer in the affirmative. Yes; religion has been at work here under her most disadvantageous form, popery; and yet she has done great things, in softening the hearts and enlightening the understandings of the people. Now, if a little truth with much falsehood can achieve great things, what may we not expect when much truth and no error is brought to act upon them? The officers and representatives of government pay a public deference and sincere respect to the priest, while he is free to urge forward the work of conversion in any way he pleases. Place a protestant missionary, of zeal and honesty, under circumstances so auspicious, and I will allow that

he has fair play, while no doubt can be entertained of the glorious issue of his labors.

Among the trees that I sketched at Zamboanga, was the *stravadium album*, or the *buta* of the inhabitants. The trunk is rude and misshapen, and juts out irregularly into corners. Its elevation is small, and the top that crowns it has nothing graceful in its outline. The branches are thickly set, and yield a profusion of green leaves that are long, pointed, and narrow at the base. When held up to the light, they do not exhibit those minute pellucid dots which is among the characteristics of the myrtle family. The apparent want of general beauty is amply compensated by the long flower stalks that hang down from the ends of the branches. These are set at intervals with a green fruit of that kind which we call a drupe, and at the earlier periods of development, with flowers also. They are about two feet in length, and thus present a feature so remarkable, that the most incurious observer could not pass the tree without a notice. The fruit is about an inch in diameter, somewhat angular, and crowned by the calyx. The cotyledons, or those two green portions of the seed which in

germination first make their appearance above ground, are large and fleshy, and adhere so closely together as to seem one mass. In those examples which fell under my notice the blossom was not fully expanded, but the edges of the petals continued to overlap each other till the whole fell off together. And thus we find an agreement between the *buta* and several other members of the myrtle family, where the corolla forms a kind of lid. At Macassar the servant who waited upon me, brought in, one day, a branch or two of this tree, with their long clusters hanging down in a most graceful manner, which so charmed my eye that I requested to know where the tree grew; but he gave me an evasive answer, which led me to think that, in his great zeal to furnish me with varieties, he had taken more liberties with some gentleman's garden than he had license to do, for I did not see it in any of my wanderings.

The bunga *kalintat* grows very abundantly in the thickets and shrubberies not far from the sea-side. This plant belongs to the pod-bearing family, under the systematic name of clitoria ternated; and is, wherever we go, found to be an

object of attachment. The whole appearance is most delicate, though the rich blue of the large spreading keel, the characteristic and most obvious part of the flower, impress you with an idea of breadth and freedom as well as beauty. The leaves are of a pale green color, and are soft to the touch, owing to a fine down, which is not visible without the help of a glass. The stem has no tendrils, but climbs like the honeysuckle. A pair of small leaves below the flower present a beautiful network of veins.

In our walks through the jungle by the river Tumboangan, we saw a large gray monkey, who seemed, by the impatient noise he uttered, to be desirous of asking by what right we had entered his territories. His tail was long and graceful, his face was shaded with a border of black. It belonged to the genus semnopithecus, of which the entethis monkey of India is the type. This genus consists of many species, which require some labor and investigation to define their peculiarities of form and their respective habitudes. They are scattered over the Archipelago, India, and the peninsula of Malacca, in such numbers, that we seldom enter the jungle without hearing

their voices, and they are sold so cheaply, that every seaman may provide himself with a pet to share his ration with him, and yield him a never-failing source of amusement. These are the monkeys as distinguished from the gibbons and the baboons. Our companions told us that the natives call the animal just described, Amo.

The roads of Borneo Proper I think we may characterise as being a magnificent estuary, having, as a rampart towards the sea, the long island of Labuan, and two or three islets of no great elevation, which are thickly covered with trees. Labuan is on the eastern side, and was, perhaps, in more flourishing times, a place of anchorage for native vessels and Chinese junks, for the name implies so much. Its appearance reminded me of Singapore, though without those prominent parts which are seen upon the latter. It is not very obvious why it was designated, by way of description, "the anchorage," as it is a good distance from the spot which, from its proximity to the mouth of the river, and its shelter from westerly winds, would seem at all times to have been most eligible and most secure. But circumstances have altered; Borneo Proper has, like the rest of

the Malayan settlements, declined in wealth, activity, and population ; so that Chinese junks, and the vessels from Macao and Manila, no longer make their appearance as they were accustomed to do a few years ago. As we draw near to the entrance of this estuary, the land that stretches toward the back of the picture seems to be of various, but not of any considerable elevation.

But on the east we have a remarkable range of mountainous ridges, rising one above another like steps in a staircase, tending, as I suppose, towards the lofty height of Kini-balu, which, from a certain position, looks like a vast cone rising out of the sea, as the interjacent land cannot be seen. Near the mouth of the river is the island of Muaru ; hard by this, ships may anchor, and in entering have only to be on their guard against a shoal that is a continuation of it, and forms a glacis round the peninsula on the west, with a versed sine of about five miles. Besides this there are no unseen dangers ; so that a seaman of ordinary courage and sagacity may easily and safely find his way to the anchorage by the help of the atmospheric currents that set towards the regions heated by the land in the

day-time; while a land breeze, that blows freshly in the latter part of the middle and in the former of the morning watch, will take him out in like manner, if he is on the alert, and does not love sleep better than his duty. The river of Borneo runs in a south-westerly direction, and for a few miles at least almost parallel with the coast; so that a kind of peninsula is formed, of which we were enabled to form some conception, as to its shape and extent, in our last excursion upon the island. In speaking of the river, I ought to inform the reader that I passed up in the night and came down in the night, so that I could only judge of the banks by the outline that they projected upon a serene and beautiful sky. The eye, however, could discern that they were sloping, and covered with vegetable growth in the richest profusion. There is a little island near the entrance, called by the natives *pulu chermin*, or Mirror island; in allusion, I suppose, to the polished brightness of the coal found upon it. I landed in the dark, and picked a few pieces of this fossil by the sense of touch. If I understood my informants rightly, a large supply of coal might be obtained from thence, which may be useful in steam nav-

igation when improvement shall have rendered wood less abundant and more valuable in the Archipelago. Before I had heard of the existence of coal in this small island, a piece of coal was brought to me at the Sultan's palace, which naturally led me to ask from whence it had been fetched; but though the name of the place, *Kianggi*, was ascertained at length, no one could point out the spot, nor had any definite idea of the extent and limits of this *Kianggi*. I was soon, however, informed that a Pangiran, of high rank, knew the place well enough, and had offered to furnish the master of our vessel a shipload of it if he pleased. So dull, however, or so unfortunate, was the writer, that he did not discover what seemed to be so well known to every other person till the last day of our sojourn at Borneo city, and then merely by accident. In returning, tired and faint, from our long walk, we crossed a deep valley or ravine, when my fellow-traveller said he would refresh himself in a stream of water that ran with a sweet and lucid lapse at the bottom of it. While he was thus occupied, I struck my hammer upon what seemed to be a vein of sandstone, but to my very great de-

light, I discovered that it was the very thing I had so often sought for in vain, the coal of "Kianggi." This vein ran obliquely across from one bank to the other, at an angle of about forty-five degrees, with the direction of the rivulet, and is more than two yards in breadth. It disappears at each end, and has been laid bare from the wearing away of the rock that once covered it, by the action of the water. The covering of powdered sandstone hides it from the eye of any one not engaged in geological researches. Its existence among the sandstone at Borneo is a beautiful fact, supports analogy, and shows us that in distant places on the earth's surface we may find coal measures of a corresponding nature. Should the reader ever visit Borneo, he will meet with this spot by taking a path called the *jalan subuk*, which is conspicuous from the palace of the Sultan as it climbs over a hill at the farthest bight of the river. It is within two miles of the edge of the river; but the path is steep, rugged, and narrow, so that it would require neither a few hands nor a short time to load a ship with such a cargo. The hills are all remarkable for their sharpness, and are often so steep that it requires the utmost effort to

ascend them. The whole of the peninsula is a collection of hills, nor do I remember to have seen more than one or two small patches that had any approach to even ground. On it we could discover that the hills gradually became more lofty towards the south-west, but on the other side of the river, ridges, that were said to be inhabited by Muluts, a savage aboriginal tribe, seemed to run at right angles to the mountains nearer to us. Their composition was all of the same kind, a very soft kind of sandstone, covered in most places with a sub-soil of clay. The sandstone is so soft and friable, that it is almost an abuse of language to call it stone at all. It would seem that the original sandstone had in former ages undergone a complete disintegration ; the clay and the silex parted company, were differently precipitated, according to circumstances, and formed strata one above the other. After this arrangement had been completed, a violent and circumscribed action, often running in lines, forced up the earth's surface into that sharp and ridgy aspect which it now wears. But, whatever may have been the cause, or its mode of operation, the result is one of beneficence, like all the rest of the Almighty's

doings ; for the water, after penetrating through the siliceous layers, runs upon the clay, and every now and then, in the rifted and shelving places of the soil, breaks out in streamlets of crystalline purity ; and thus we have natural filters, as perfect and complete as art, and refinement in knowledge could render them. In one of my walks I found a piece of what I take to have been the original rock, hard red sandstone, out-cropping upon the summit of a hill. It consisted of round and angular masses of quartz, with black shining particles of mica, held together in a ferruginous cement. Near the same spot I found a mass of similar hardness, and my friend picked up a few fragments of quartz in another direction ; these were all the varieties we met with among the ever-recurring alternations of sandstone and clay. Notwithstanding this uniformity, the hills and valleys are thickly clothed with trees and shrubs, with many flowery decorations under their shade. The particles of sand have been washed away, and left behind them a surface of clay ; in this they flourish with scarcely any apparent mixture of a vegetable origin. Here and there, upon the more elevated hills, we see a barren spot, because

it is inclined at so great an angle to the horizon that the clay cannot rest upon it. Pepper, the upland rice and pines, are cultivated upon the sides of the hills; and the productiveness of the soil is only slightly modified by its inclination with the horizon. I suppose that the quantity raised might be increased many hundred fold by the reduction of the hills and dales now overgrown with trees and underwood. The only manuring which the soil obtains is from the burning of the vegetables that grow upon it; and it is instructive to observe how productive one chiefly of clay is, with so little assistance from the hand of the tiller; a little of Chinese skill and assiduity would increase its virtues indefinitely. Of these there are eighteen or twenty, who employ themselves in the culture of the pepper-vine, live in great ignorance and neglect, and seem never to trouble their heads about any thing beyond the feeding of their animal nature. They are the only persons who distil ardent spirit from the rice, it being disreputable for a Malay to concern himself in such a business. The quantity is so small, however, that I could not obtain a little for preserving some zoological specimens,

though my messenger went to every *Chinaman* in the place. There are vices enough among the people, but spirit-drinking and debauchery resulting from intemperance of this kind, form no part of them. The Chinese that we saw had forgotten much of their native language, which is often the case with those who live in countries where the Malay is spoken. For that language is so melodious, that they soon learn some of its terms, which at length displace the recollection of their own ; and they acquire a habit of delivering their sentiments in a very remarkable amalgamation of tongues.

A Malay has a great affection for a house built upon the water, so that we often see the shallower parts of a bay covered with buildings, with only one here and there upon the land. The convenience of a natural sewer may have induced them to make such a choice, as they seem to confine themselves to places where the tide sweeps away the recrements of the inhabitants without any care or labor on their part. Situations of this kind are sometimes very pleasant, but not always ; for the buildings sometimes cover a salt marsh, as on one side of Singapore,

where the scenery is not enticing, nor the breezes sweet and wooing; for at low water they fan and agitate various masses of matter in a state of decomposition. The houses at Borneo stand upon the water in the usual way, and though the tide runs at the rate of three or four miles an hour, the nauseous smells that visited us while at the palace of the Sultan, told tales about the state of affairs at the bottom of the river. We know from experiment, that the water in a river runs with its greatest velocity at the surface and near the middle of the stream, and its power of removing obstructions, according to a fundamental principle of hydro-dynamics, depends upon the depth, it will not, therefore, appear strange that many impurities are lodged in the sides of the river, though the flood at mid-channel may run at the rate of four miles an hour; especially when we remember that this power is farther modified by the inequality of the bottom. These observations are neither unnecessary nor far-fetched, but help us to account for what at first sight appears paradoxical; for we say, "how can any thing unwholesome remain in a medium of purity spread

out in such a noble expanse as the river of Borneo?"

The houses extend on both sides of the river about a mile and a half, in a triple, and often in a multiple row, so that it is not easy to guess at their number with a hope of coming near to the truth. On the south side there are, perhaps, seven hundred and fifty buildings, which, by assigning ten individuals to each, will make the number of persons there to be seven thousand five hundred. This allowance is not too great for each building, as it is often divided into several apartments, and augmented by appendages for the accommodation of as many families. On the north side there is a row which runs in a corresponding manner about a half a mile to the eastward, to which I reckon three hundred houses and three thousand inhabitants. But here there is a large devarication of the river, which, after a little distance, branches into several beautiful sources, or *ulus* as the natives call them. Here there is a large *compitum*, filled in various places with houses, wherein the people live in dense crowds, and certainly do not amount to less than five thousand. In the western continuation of the

houses on the north side, we have at least five thousand more; these several sums, being added together, give twenty-two thousand five hundred, which is under the true number. There are a few scattered about the surrounding country, which, when added to the foregoing number, make it more than thirty thousand as the entire population of this ancient colony of Malays. If they are correct in the account they gave us of their migration, it took place about four hundred years ago, and was from Johore, on the eastern side of the Malacca peninsula. Their remoter ancestors had, perhaps, in like manner removed from Sumatra to the main-land, in quest of room and adventures. The houses rest upon piles formed out of the straight stem of the nibong palm, which is neat looking and elastic at first, but the water soon reduces its outer portions; and the inner, being naturally soft and cellular, give way at once; so that a building soon needs repair in one or more of its supports. It is the nature of palms to be hard only in a dried woody crust, as the growth takes place near the centre, and not at the circumference. They are also destitute of a proper bark, or any gummy secretion, to

answer the purpose of a natural varnish; hence the work of decay commences almost immediately after they are set in the water. The necessary repairs are seldom done in time; so that a house generally resembles a quadruped standing on three legs, though the reader must not understand me as meaning to say that an edifice has only four piers, for they are numerous, not only for present security, but as something laid up for the future. A Malay, however, takes all things easy, except an insult offered to his honor; and the work of decay is allowed to go on till the whole fabric is ready to tumble upon the head of its owner. We had an example of this while staying there, for the harem or *astana* was so near falling down, that when the workmen went about removing some beams and rafters, the rest began to anticipate their labors. The doctor was soon called for with great vehemence; a spar in its descent had ploughed a deep furrow in the pericranium of a chief man, and I had scarcely replaced my instruments, when another was brought to me with one of a similar kind in the side of his face. These occurring so closely together, put them upon some

contrivances to prevent similar disasters, or I should have had a fair day's work in dressing wounds and bruises. The walls and roof are generally formed of palm leaves, which agrees very well with the nature of this foundation, being light and of easy construction. A platform, of palm split into pieces, surrounds one or two sides of the building for the convenience of passing to the nearest dwelling, and leads down to the water by a ladder not remarkable for the facility and comfort with which it may be ascended. Use, however, reconciles a man to many strange things. The thatch and walls of these dwellings are generally old and dishevelled, which gives them a very shabby appearance; a defect by no means obvious to the natives, as they commended some of them as very excellent in show and accommodation. There was not that regularity in the situation and relative size of the apartments which we observe among the Chinese; but in general we shall be pretty near the truth if we say that the front was occupied by the master and his male dependants, while the back and more retired parts were filled by a train of females. The former were busily employed in

carpentry, boat-building, and in the making of various utensils for the use of their master's establishment. The latter endeavored to cheat their prison hours by setting their hands to different kinds of needle-work, or, gathered together in numerous clusters, were fain to steal a glance through a favoring loop-hole at the mien and costume of the stranger, of whom they had heard little and seen less. I was sent for on one occasion to see a little child affected with one of the cutaneous disorders so common among this people, and was received with much attention by a middle-aged chief, whose person and manly countenance pleased me exceedingly. He was sitting in the centre of a large room, with a small Chinese tea-tray by his side, and looking to some of his followers, who were pursuing their mechanic labors under his directions. In the next apartment were heard the movements of a swarm of females, who in my imagination seemed to run upon the side of the wall like so many mice to look through a few crevices which the joiner had left near the roof. By what means they ascended I do not pretend to guess, but the impression on my mind was exactly as I have described

it. As often as the chief lifted up his eyes towards the wall, those on the other side, thinking that we could see them because they could see us, instantly began to run down in order to escape recognition. Here we had a crowd of delinquents condemned to perpetual durance, whose only offence was that they had some personal comeliness, or more attractions than the rest of their companions.

What gives such an irregular appearance to the dwellings of the chiefs, is the number and variety of out-houses and little hovels that are planted round them. Custom requires that a man of rank should have his retainers and inferior chiefs around him; these must be accommodated with lodging places for their mistresses as well as for themselves. These domiciles are of different forms and sizes, and in different states of repair; no regard is paid to uniformity in either their construction or their site, but they are set up wherever room can be found for them. The house of the prime minister is surrounded with more apparent irregularity and bustle than the rest, though the kindness and decision of his character make order spring out of confusion, and

stamps a kind of merit upon every thing about him. The platform in front of the building was crowded with laborers; in the anti-room were persons busy in preparing various articles for sea-service; in the hall, the carver in wood was displaying his handy-works; and at one end of the tenement was a dock, where a neat vessel was in the process of construction. Every thing bespoke activity and a multitude of engagements. In the palace of the Sultan little, comparatively, was going forward, except it was the repair of a platform, the mounting of a piece of ordnance, or the hewing and modelling of a tree into a canoe. There was, at most, but a modicum of that business, stir, and enterprise which we saw at the minister's house.

The driving of the piles is a very rude operation, as it is done without the use of the hammer, or any instrument which we should naturally think best adapted for the purpose. A gromet, or ring made of rope, is put round the trunk of the nibong palm intended to serve as a pile, with just freedom enough to admit a couple of staves. These levers are made to cross each other, and tighten the rope in proportion to their

divergence. Two men lay hold of their extremities, and thus, by alternately depressing and elevating the pile, bore a hole for its reception. The loose material at the bottom of the river presses upon the base, and this gives some degree of steadiness to it, enough, perhaps, for the durability of the wood and the objects it is meant to fulfil; but to our eyes the method has something that is peculiarly unworkmanlike and ungainly about it. Some of their guns are foreign, and some of native casting; an art on which they value themselves very much, and, to do them justice, not without some show of reason. These are conveyed to the place of destination in canoes, and then lifted up several feet by main strength; loud cheers and mutual chiding supplying the place of levers, cranes, and pulleys. The large pieces, as they have neither carriages nor wheels to ease the violence of their recoil, would, if fired with a full charge of gunpowder, soon betake themselves to the river and carry the battery along with them, and thus do more mischief to their friends than to their foes. Their skill in fortification, engineering, and their military foresight, seem to be all of a piece; for

an enemy would have no occasion to come within the range of these guns, unless he chose to do so, for there is plenty of room to come up from the bend of the river behind the southern range of buildings, from under which he might annoy the batteries at pleasure, while the Sultan and his neighbor chiefs could not return it without firing among their own subjects. By a reference to the frail and jaunty nature of these batteries, and to a plan which I drew, it would appear that the palace of the Sultan, which commands nearly the whole city, might be taken, without encountering a single shot from their cannon. Their safety lies in the generosity of foreigners, and not in their means of defence; while the heart of every man faints within him at the thought of meeting a white man as his enemy. According to the law of nations, such a chastisement would not be amiss, for they harbor pirates and share in their unlawful plunder. The harems of the chiefs are graced with the good-looking females, which the pirate has dragged from the houses on the shores of the Philippines. These poor creatures have been taken from all that is dear to them,—from the

arms of their husbands and their little ones perchance, and are here consigned to a loathsome imprisonment, kept by a goaler who is too often one of the vilest of the human race, endued with every quality of person and mind that can render an individual hateful and disgusting. One of our number, while in conversation with a chief, who is the proudest, if not the most talented, among his brethren, caught sight of a woman and child, whose form and complexion seemed to be European, and their hair of a flaxen color. Whether his observation was accurate or not, I cannot tell; but he was very positive in his assertions, and could not easily be mistaken where personal differences are so striking and so obvious. At the palace Mr. Dickinson was very much interested by the appearance of a youth, whose features were nothing akin to the rugged and ungracious physiognomy of the Brunese. His meek behavior formed a great contrast to the proud and ruffianly demeanor so remarkable among the degenerate sprouts of nobility that haunt this abode. Mr. Dickinson's eye often pursued him as he swept away the rubbish, and fulfilled the meaner offices of drudg-

ery for the others, till he was led to ask his history; when he found that the poor fellow had been lately kidnapped from Luconia, brought hither, and given by the pirate as a kind of peace-offering to the Sultan. A day or two after, he made his escape, and though the ships were searched, the deserter was not found; for his benefactors had made a little hut for him in the jungle, where he was lodged in safety till the pursuers had given up their hunt, and all suspicions of his concealment by foreigners had subsided. What became of him afterwards I know not, for we had neither the honor nor the blame of taking any part in his rescue.

As Borneo Proper has had but little intercourse with other nations, the ancient customs have been maintained in greater purity than in most other countries about the Archipelago, if we except Java. Here we find the feudal system still in existence; the chieftain expects all kinds of service from his followers, who know nothing about a free soccage, or experience any differences in the mode of tenure. They hold themselves ready to answer when called for, and to execute whatever may be his pleasure. They

form the essential part of his inheritance, the inseparable heraldry and adornments of his title. Use has rendered the burden easy, when not accompanied with any outrageous acts of oppression ; and every man is taught to regard his chief as his friend and protector, and looks upon the whole tenor of his conduct with an eye of fondness and partiality. In fact, he identifies himself with his master, and seems to find as much pleasure in waiting upon him as the other can in receiving his attentions. We may compare the leader to the head, and his followers to the body ; he reasons and decides, they listen to his commands, and fly with alacrity to execute them. Such is the rooted attachment for this form of government in the heart of a Malay, that in Malacca they bear the spoiling of their goods rather than leave their chief and settle in the British territory, where property is secure. At Singapore, the chief no longer exercises an uncontrolled authority over his subjects, and they are become poor, useless, and dispirited creatures. They had never learned to choose for themselves, or regulate their own conduct ; so that now, like the hands without the head, they sink

down in faint and drooping imbecility. Despotism is the only kind of rule that agrees with this people, for in intellect and resolution they are in their childhood, and will continue to be so till knowledge, religion, and enterprise shall have enabled them to think and act for themselves. The will of the Sultan is the law of the land, modified, of course, by the influence which his counsellors and great men exert upon him. He is elective, but the choice is limited to a single family. The nature of such an appointment leads to intrigue, quarrels, and vindictive measures, which may have been the cause of that anarchy that, a few years ago, drove away all the foreign vessels that used to trade at Borneo. A chief was sitting upon a bench one evening, in conversation with us, when the Sultan suddenly made his appearance, whereupon the chief sunk down upon the floor according to the etiquette of the palace, and looked at his highness with a countenance full of respect and complacency. "Very good," said he, as the Sultan turned his back, for in the days of his predecessor no man ventured to lift up his eyes, and, when sent for, a chief sat trembling like a man

about to receive the sentence of death. Many indifferent things become good by contrast and comparison; we regarded the Sultan as a worthless old fellow, our acquaintance looked up to him as a good and gracious prince. He is not without natural endowments, and seems to possess great shrewdness in discrimination and an admirable memory. When others were at a loss about the name of an object, the Sultan was sure to know it; and would not only give the true denomination, but sometimes two or three others, which had at one period served as provincialisms. But flattery has so blown up his heart and stupified his powers of reflection, that he will play all kinds of baby pranks, and then look round for applause with all the assurance of conscious merit. He has all the attributes of a child whom cockering and compliments have filled with vanity, and plunged into an utter forgetfulness of every one's interest beside its own. He is therefore as selfish as he is conceited; and I speak from observation when I affirm, that when any object was to be obtained, there was no manœuvre, however mean or unworthy, to which he would not resort. He used every art to extort our proper-

ty from us, and what he could not obtain as a gift, he borrowed without returning. At first he promised to make us many presents by way of return, but they never made their appearance. As our hopes were not very sanguine, the disappointment occasioned us but little uneasiness. But we were so disgusted with his conduct, that we resolved between ourselves not to owe him for the rice and rancid fish, and the hard lodgings he had granted us. We accordingly presented him, a day or two before our departure, with a quantity of nankeen, and some sets of tumblers; and made a distribution among all the members of his household, that no one who had rendered us service, either real or imaginary, might go without his recompense. We did not tell the Sultan in what light we wished him to regard these presents, for he spared us the trouble, by saying that he must receive them as payment for the bountiful manner in which he had fed us, and would not therefore consider himself bound to honor us with any tokens of his bounty. We brought nothing away but an increase of experience, and a consciousness that we had labored to do them good, by relieving their pains

and dispensing medicine for their diseases with unwearied assiduity. No man brought a plant for our instruction, or plied an oar without his reward. It is refreshing to think, that whatever our adversaries might have taught them to think of us, they could not avoid seeing that missionaries will do good and suffer hardships without any respect to filthy lucre or worldly gratification. He was not without natural feeling, for he wept like a child when he took leave of the interpreter, and his cruelties seldom went beyond a delight in tormenting a poor little girl, whose shrieks at being shown to the white men had something very melodious in them to his royal ear. An officer was often sent to summon us as if his highness had some important communication to make, though for no other purpose than to act the character of goblin; but as our approach filled the frightened little creature with inexpressible agonies, our part was soon ended, and we retired to our lodging-place with a proper sense of the honor that had been conferred upon us. At one period of our stay at Borneo, the Sultan seemed to contemplate very seriously the idea of detaining us in the country; for our knowledge

of medicine would have rendered us useful, while our color and nation would have made us ornaments to his train. Two men, one from Java and the other from the Coromandel coast, who had shown themselves friendly to us, were set in the stocks as a preparatory measure for our detention; and a native of Singapore, and consequently a British subject, could not obtain leave from him to take a passage in the Himmaleh, though he had a wife and children in that colony. I must, however, do him the justice to say, that he promised to give me a house and a wife, or even to send to England for any one, if I would consent to stay. The phrase of giving a wife is not without its import, for males and females are the *beneficium*, or fee of the Sultan on some great man; so that such a companion is not had by the ordinary methods of kindness and courtship, but must come as a special deed of gift from her owner. The interpreter, in allusion to a Parsee who had settled here, said the Sultan had given him a wife, to which at first I attached very little meaning; but when I heard the chiefs refer to the daughters of their followers as a part of their property, I understood the

matter. The native of Singapore was a poet, and used to make extemporary verses, and recite them, to the great amusement of the rest; so that his wit made him valuable to the Sultan. His drollery was sometimes the condiment of our homely meals, as he would take occasion to come near us, and with all affected sympathy commiserate the lot of the poor white men that were condemned to eat such fare.

While the Javanese and the Ching were sitting in the stocks, for no offence that we know of, save their attachment to us, the wife of the latter set up a mat to screen her husband from the looks of the idle fellows who came to gaze at his misfortune. She sat down by him, and placed her little one upon his knee, to soothe his mind and vary the dull hours of confinement. And, as a native of the Indian peninsula is not altogether regardless of his outward man whatever may be his situation or the state of his apparel, she brought him a little mirror, that he might be informed as to the several particulars which make a countenance either in or out of order. The lustre of this little toy caught the eye of one of the pangirans or princes that form the chief house-

hold servants of the Sultan, who, in a tone and mien worthy of the deed, placed himself at his master's feet, and told him of the discovery. And as it is a sort of treason for any poor man about the Sultan to own any thing worth possessing, the wife was sent for, who, crawling upon the floor in the most abject posture, lifted the offending object towards the royal hand, which was hastily extended to receive it. He inspected it with an eye full of astonishment and importance, but finding that the glass was cracked, and the silvering had quitted its hold in several places, he returned it to the poor creature, who crept behind the building, and looked as if uncertain whether she might rejoice at her escape or not. To make oppression bitter, it is not necessary that there should be any pains inflicted upon the body ; take from a human being the disposal of his time and his property, and the burden will be sufficiently heavy. And then if you would give an edge and finish to the anguish of his soul, take the fairest among his offspring from the bosom of her parents and the object of her choice, and forever shut her up in a harem for the gratification of a man whose loathsome qualities I

shall not attempt to delineate, lest I should use worse terms than might become me. Some among us affected to think that all this was well enough, that it was superfluous to interfere and attempt to make matters better by Christian instruction. No cries were heard, the scourge or the torture had left no marks to betray bodily suffering; and an offender could not be put to death without a hearing before the Sultan and the chiefs of the state. Yes, a slave has the benefit of being tried by a bench of chieftains, without friends or counsel, prior to his being carried to a little island in the river, there to receive the punishment of being hewn in pieces, for some act, perhaps of larceny or petty theft. The stocks, an indispensable item in every great man's house, are the usual instruments of penal infliction, and would at first sight seem to be a mild and considerate mode of chastisement. But as the leg is very closely confined by the small size of the aperture, the situation soon becomes very painful; and if the confinement is for any length of time, the lower extremities are wholly disabled by it.*

* See a beautiful allusion to the same thing, Luke iv. 18, "To set at liberty them that are *bruised*," and Plato, Phædon, 3.

A poor Hindu, who had been privy to a theft, was compelled to bear the thief company till he was liberated through the efforts of the interpreter, who very feelingly used all the influence he had with the minister. After his freedom he was obliged to remain in the same place, for rheumatic pains had bound his legs and thighs together; and while I was surrounded by individuals, who were telling their ailments without waiting for each other, he endeavored to make one in the circle, but in vain, though he was not four yards from me. "O Sir," said he, with looks full of piteousness, "my limbs are aching, and I am so ill within—my wife will give you twelve fowls and plenty of all kinds of fruit for one dose of medicine." From these circumstances, which would have scarcely been worth detailing had they been accidental, and not essential parts of the system, we see that there may be a great deal of cruelty and hardship where no such things at the first glance seemed to exist. The rod of oppression falls heaviest upon the woman. The Creator has, indeed, from the beginning, made the other sex lord over her; but in the providence of his goodness he hath put so many attractions upon

her, and bound her to him by no lesser tie than of being bone of his bone and flesh of his flesh, that she is strong in her weakness. In Christian lands we understand and feel all this; but where her person is treated as a chattel, and the possession of her charms may be had without either merit or suing for, the case is different. As the females are kept in seclusion, we saw but little of them, and yet that little seemed to give us an insight into the whole matter. Among other situations we noticed the manner in which they approached the Sultan whenever they were called into his presence. The prostrate attitude, the anxious look, and the whisper subdued by a sigh, gave us most painful evidence of their humbled and defenceless condition. It was the portraiture of a forlorn creature, who felt conscious that she had no one to pity her, no one that could take her part. As an example, I may cite what my friend witnessed one night in the case of an old woman. As the Sultan was pacing the platform in his usual manner, an aged female ascended the steps out of a canoe, and crawled in a most abject posture towards his highness as he advanced to meet her. From

her attitude, and the feeble and almost inaudible accents of a "bondman's key," she seemed like one who came to beg for the life of her only son.

Now, in order that the reader may see this little circumstance in the light in which it presented itself to us, I must trespass on his patience, and tell him the following story. Lories, or those beautiful parrots from the Indian Archipelago and Papua, are greatly admired at Borneo, and inquiries were soon made as to their existence on board the Himmaleh. One of our number, wishing to lay the chiefs under a high obligation to himself for reasons which he scrupled not to tell us were altogether selfish, promised to gratify the Sultan with one. He meant, however, to spare his own, and put his hand upon one of those pets with which the seamen were wont to share their morsel, and amuse their leisure hours. In the mean time the Sultan discovered that there was a native of the Coromandel coast in our train, who spoke Malay with ease and fluency. Him he sends for, and asks a variety of questions as to the state of things on board ship, and among the rest, the number and ownership of the parrots aforesaid. Tambi, of course, told

him the truth, as he had not yet learnt that concealment in such a matter was necessary. He was charged to bring one or more immediately, a charge which he executed to the full, as he was not without a hope that the new office of broker in parrots would be a very profitable one. In this, however, he was very much mistaken; for the discovery produced a tragic display of passion, such as great spirits alone are capable of feeling, and such as men only who despise the common rules of decorum can give a proper effect to; and poor Tambi learnt that his rewards consisted in cuffs and a load of abuse, and not in money and commendations, as he had fondly anticipated. The mire and filth thrown up in this tumult soon began to subside, the birds made their appearance, and the Sultan, though he saw that wrath was gone out against him, was too glad of his prize to think much of future consequences; and presently set himself upon finding out the best method of keeping the whole, and freeing himself from the unwelcome intrusion of any rival claimants. To further this design, it would seem the aged female, whom we left lying at his feet, had been sent for, and in that posture,

and in those tones of dejection, she had been instructing him how and where he might bestow his favorites with secrecy and safety. After she had made the subject quite plain to the royal mind, the birds were placed in her hand by himself, with an air of thought and concealment that one could scarcely expect to find save in a den of thieves. This little fact is not singular, nor does it stand by itself as a part wrested from the whole; it is one of the fairest specimens of Borneo that I can entertain the reader withal. The effect of a uniform system of such kind of dealing upon the hearts and tempers of the population can be judged of by a reflecting mind with far greater approximation to truth than I could hope to come by the most affecting turns of expression and the most labored declamation. We may say, I think, without any color of a sanctimonious spirit, the Lord deliver the people from such masters.

On our first arrival at the city of Borneo we did not reach the palace till midnight, a very unseasonable time, it must be confessed, to pay our respects to a great man. The prime minister and most of the principal chieftains were present, who

took their seats upon the floor ; while a settee and a few chairs accommodated the strangers. After waiting long enough to satisfy the rules of etiquette, his highness was announced, who, though in a great passion at such an inroad upon his balmy slumbers, shook hands with each of us, and then resumed his seat. Anger, that mars the countenances of most men, gave a serious dignity to his, which was set off not a little by a fine, dark, and expressive eye. For some time each one looked at his fellow, till silence becoming painful, the minister made signs for us to quit our benches, and sit down upon the same plane with the rest, thinking that the Sultan would follow our example, and thus recover himself from this unwelcome fit of taciturnity. This arrangement had the desired effect ; the formality of the interview was greatly diminished, and the Sultan soon beckoned the interpreter to his side, that he might ask the nature of our errand, and such questions as our appearance might raise in his mind.

When the master of a small vessel, that arrived during our stay, came to court, matters put on a different aspect. The Sultan and his atten-

dants were not long in suiting themselves in their court dress, but the ceremonious usage of the country required that they should seem to have a multitude of engagements, though for the best part of an hour they had nothing to do but to leer at each other. At length he appeared with as much pomp as his household could afford; we could discern a kind of mock majesty in his looks, and an attempt at seriousness in his demands; but there was an idiot smile playing about his face, which betrayed the secret joy of his heart. He now found himself delivered from some uneasy apprehension, which had been excited by a report that several ships had arrived with more than a due proportion of white men. He saw, too, before him a person who would gratify his cupidity by some presents as a matter of course, and one from whom he might abstract a few more things by force, and a few by slight and enticement. We had an ample commentary upon this a few mornings after, when we saw him ransacking the baggage of the same individual in his absence, taking some at once, and pointing out others as things he meant to ask for when he returned.

In all Malay governments there are certain persons called mantri, or privy counsellors, many of whom, if not all, are so constituted by special appointment. These are certain grave and reverend bodies, who visit the palace towards the decline of day, and sit down before the Sultan in a thoughtful posture, as if they were musing deeply upon some important question of state. Let us take a sample, to show us how far we may be warranted sometimes in drawing conclusions from appearances only. We may conceive that the subject of one day's consideration is propounded in the following terms: "My lords, I went betimes this morning into the recess at the back of my throne, which is occupied by the white men, where I saw this charming piece of printed cotton as it was suspended by a cord; I forthwith asked whose it was, whereupon the doctor said, 'it belongs to my lord, the Sultan.' I then demanded 'who gave it to him?' 'The captain gave it to him,' was the reply." No question, of course, arose out of this which might rob any counsellor of a night's rest; still every one was bound to regard it as a circumstance highly curious and interesting. And, to tell the truth,

it had more interest than perhaps the reader was prepared to expect; for he had paid a certain sum of dollars in purchase of the self-same piece of cloth the last thing he did before he retired to rest, which was two or three hours after midnight: a fact which he suppressed for the sake of telling a story; as he had a memory too retentive to forget a matter that so nearly concerned his own interest. The freaks of a man, however, who had done his best to abuse the good gifts of a natural understanding, were chiefly confined to the palace; for the minister had put a hook in his nose, and so kept him from doing the mischief abroad which his folly or his avarice might prompt him to. A levee was an amusing sight; on one hand you might see the minister, in person a small man, sitting with a demure countenance at a most respectful distance, and now and then uttering some expressions in a subdued and plaintive strain. On the other, the Sultan, with a proud stare mingled with a wild anxiety, who felt these soft words to be severe strictures upon his behavior, coming, too, from a man who expected that they should not only be felt, but be considered as cautions

for regulating his conduct in future. He resembled an animal with one foot in a trap, who would fain change his uneasy position with no less cost than the loss of a limb.

The minister, to whom we have referred more than once, is the chief executive officer in the state. The distinction between him and the Sultan was very concisely made by a brother of the latter in conversation with myself and fellow-traveller one evening. "The one speaks, and the other acts." The entire control and management of all public matters are placed in the hands of the latter, who, from the advantage of such a situation when a man of talent, like Muda Hasim, can enact his own pleasure, and so leave the Sultan a mere pompous trifle, surrounded, indeed, with the habiliments of war and majesty, but destitute of any real power or authority. We see a large hall of assembly, a throne, and a large gong, with a hide stretched over the end of a hollow tree, which hangs in a shed at the end of a long jettee, that its deep tone may not be broken by conflicting echoes. His liege subjects are at times summoned by the sound of this instrument, in conformity with the Malayan

custom; when we may suppose him seated upon his throne, in the midst of his guards, while every thing is done to impress them with a sense of his royal magnificence. At other times his counsellors sit at his feet; the chieftains pay frequent visits of respect, and the orang kaya, or great men of the realm, who live at a distance, wait upon him from time to time. But in the midst of much real respect for his person and office, and a thousand usages of ceremony observed with the most scrupulous attention, he seems to be only free to do evil; he can harass any part of his people, or put a chief to death, because his own person is sacred; but for any benefit that he might wish to confer upon the general welfare, he is solely dependent upon the wisdom and integrity of his minister. Such, if we reason truly, is a kingly denomination; without a free constitution and a virtuous community, it may do as much mischief as it pleases, but to do good it hath no might.

As the boat proceeded but slowly, we did not reach the residence of this man till midnight, as was intimated above; here we found a great number assembled, partly to welcome us, and

partly to gratify their curiosity. As the interpreter had been a great favorite, the room, which good manners oblige us to style a hall, was filled with a most joyous uproar, and accents of cordial greeting saluted his ear from every side. After we had waited long enough to compose our thoughts and reckon up all the particulars of our errand, Muda Hasim stepped forth, and with an easy air shook hands with his guests, and then presented each of them with a cigar of about a foot in length. This little ceremony being over, he sat down before us, and then looked round with a studied but pleasant smile. At the first sight of him the uproar instantly subsided; without hurry or bustle in taking their places, every native sank down upon the floor with that noiseless ease and address which are the result of early habit; nor was the remnant of a smile left upon a single visage in the company. One could perceive in him a certain consciousness of his rank and mental superiority, which he exhibited as much, perhaps, to honor his guests as to exalt himself. The peaceful state of things at Borneo, when we saw it, was due to the merits of this man, which, when we consider

them in reference to what we see in the rest of his countrymen, seem to be of no ordinary kind. The order of his household, and the character of the persons about him, afforded a great contrast to what we saw at the palace of the Sultan. In one we have a motley group of ill-favored sycophants, whose business it is to execute the dirty errands of their master, and to abet him in all his knavish practices; in the other we have men of a respectable bearing, and, whatever may be some of their moral delinquencies, they appear to understand that it is their duty to perform the biddings of a spirited and enterprising chief, and not merely to wait upon his vices. He is anxious to introduce improvements among the people, and takes the surest way to accomplish his wishes by setting the example in his own establishment. The work will, of course, advance but slowly at first, for want of models, instruction, various kinds of stuff, and different utensils, and withall, that encouragement which an experienced and liberal-minded foreigner could give them. He, and several leading persons besides, are willing to learn, and would gladly listen to any hints that would assist them in the construction

of useful articles. This I think I may affirm with a considerable degree of certainty, and should rejoice to see the experiment fairly tried, as there is little doubt in my mind about its successful issue. His thoughts are not confined to mechanic undertakings, they extend to the general concernments of his subjects; he wants to put matters upon some durable footing, so that his son, a very interesting youth, and the chief joy of his father, may find his seat easy and secure when his kind protector is no more. He was meditating a visit to all the neighboring places upon the coast which acknowledge the supremacy of Borneo, in order to bind them to that state by leagues of confederacy and exchanges of mutual confidence. It was said that he was very anxious that the Himmaleh should accompany him, as it would have added very much to the importance of his mission; but as this was not set down in the master's instructions, the offer was declined. It seemed an opportunity so desirable, that I lost no time in expressing my belief that such a stepping out of the line of our instructions would please the projectors of the

voyage, and also my readiness to share in the blame, should any be incurred by it.

I would not rate the character of Muda Hasim too highly, nor attempt to set off his endeavors with a coloring that does not belong to them, lest I should disappoint some and deceive others. The Brunese are a bad people; we saw and felt them to be so in the average sense of the term, with many supernumerary vices. But I think something ought to be done to help Muda Hasim in his laudable undertakings, for surely Christians should not stand as indifferent spectators when a Mohammedan or a heathen nation is making the smallest effort towards a change for the better. A man with a little insight into medicine, an acquaintance with the mechanic arts and manufactures, and a little reading in the common principles of jurisprudence and legislation, might make himself useful among them. He must, however, be a man with a few years of manhood upon his back, some experience in the ways of the world and the general turn of human dealings, and, above all, a large stock of patience; for he would find an abundant use for it. *I* can tell him that, and I think my fellow-traveller would say amen

to the affirmation if he were within hearing. The practice of physic would give him an object in the eyes of the people, who would never be without ailments while the last dose of medicine remained in his chest. The hale and the sickly would flock around him, all alike importunate for relief; for though the body of a Brunese may be well, his imagination becomes diseased the moment he sees a doctor. There is a sort of passion for taking physic in Borneo; so that, if in a numerous company one should complain of an ache, and persuade the doctor to give him a remedy for it, all the rest would on a sudden begin to feel unwell, as if by sympathy; and not one but what would think himself inhumanly treated if he did not carry away a dose of medicine in his pocket. His knowledge of the arts and other useful matters would render him invaluable to the minister and his friends, and would, in time, give him such an ascendency, that he might substantially do as he pleased. He would not ostensibly labor to overthrow the religion of the country, nor all their favorite customs at once; for this would be worse than unnecessary, for knowledge and the light of Christianity

dawning upon the mind by degrees, and an increasing respect for the character of missionaries, would so undermine these stumbling-blocks, that they would tumble into annihilation of their own accord. I do not mean to say that he should forbear to act the part of a Christian instructor in the fullest sense of the term; for he would find many opportunities of reproving all for their vices, instructing the more docile in the doctrines of salvation, and reading the word of God to crowded circles, as it is thought a great favor to hear a white man read. He should not conceal his relationship to the messengers of good things, for it is a matter of the highest importance that the name of a missionary should be inseparably joined to the idea of a benefactor. And it is one among the very few bright specks in this hemisphere, that a missionary is beginning to be looked upon as a person belonging to a distinct order of men, in the pursuit of objects not generally sought for by the rest of mankind, and actuated by very different, if not by higher and better principles. I have given an example to this effect in the Chinese Repository, and therefore shall not dwell upon it here. A knowledge

of the principles which have guided lawgivers in fitting their enactments to the exigencies and temper of the times, would be highly useful; for it would enable him to discern and select such remedies as would best meet the nature of the disease, and thus ultimately remove it with the smallest amount of trouble, change, and inconvenience. Regulations which had nothing to recommend them but their great simplicity, and reforms that were scarcely perceptible at first, have, in after-times, because they were nicely adapted to existing circumstances, been productive of the happiest results; while sweeping measures, the darlings of youthful legislators, have wrought nothing but annoyance, and left the malady just where they found it. For example, he might point out to them the propriety of some secondary punishment instead of hewing a man to pieces for certain offences, as the prevalence of theft and dishonesty would afford him abundant arguments to show how severity multiplied crimes by rendering detection almost impossible. The minister told us to take care of our goods, as there were many rogues about the Sultan; a caution, by the way, that was not suffi-

ciently attended to, for we lost several things that we could not replace in this part of the world. In one of our journeys the boat was stolen, and we were obliged to get back to the palace as well as we could. It belonged to the Sultan's brother, who said the people were great thieves, and so much of one feeling in this respect, that it would be impossible to recover the property. He might in time prevail upon the minister to discourage polygamy in the inferior chiefs, and recommend a limit to this indulgence in the higher ones, by showing how it promoted vice and a reckless life in the poor, as it left so many unprovided with partners, and how detrimental the practice was to the health and comfort of the higher classes. The mere concession, on their part, that it was an evil, followed by the smallest efforts to check it, would prove a blessing. He might advise them to leave the vassal in the unmolested enjoyment of his little gains, and the master of some stated allotments of time for his own use; to make acquisitions reputable, and not, as they are now, a ground of suspicion, and liable to seizure. He would not have to look far for arguments; since the most valuable servants

about a chief are persons who are allowed to hold property, and retain some shadow of independence as a part of their birthright. There are three categories where improvement is obviously necessary, which may serve as a sample of the rest; a discerning mind would discover others where a gentle and well-timed interference would be useful. I would not attempt to dazzle any one with an array of golden hopes; I tell him of a people that stand very much in need of an amendment, and who, I think, by methods usually pursued by the enlightened part of mankind in such circumstances, might be made better. The preaching of the Gospel, without the use of such moral instruments to get rid of old habits and form new ones more in keeping with Christianity, would, like many other missionary experiments in these regions, prove a very slow business. Some, indeed, with hearts overflowing with the fervor of youthful inexperience, and their heads rendered dizzy by the intoxication of self-applauding vanity, have imagined crowds of heathen flocking to hear the news of salvation from the lips of the preacher, or running, with outstretched hands and panting souls, for "the

word of life," and they have made their friends believe that they really saw such things; but if we have our eyes where Solomon says a wise man usually carries his, "in his head," we behold a landscape wild, dreary, and uncomfortable, where we pick up a few remnants of mind and an amiable disposition like so many pearls, and are ready to bless God when we find even the semblance of a good thing. My observation applies to the shores of Eastern Asia; I have myself seen better things elsewhere. But be the field of labor what it may, it is our privilege, if not our duty, to press onward; and when one method fails of success, to try another. If the people will not receive the Gospel, they may listen to a lecture on useful knowledge, or a little story about the laws and customs of better countries; and thus get something that may help to cure that lamentable imbecility of thought and irresolution of mind which are the characteristics and essential features in the moral habitude of an Eastern Asiatic. If our persons are rendered sacred, and our services invaluable, by the practice of medicine, we shall dwell safely among them; and our words will in time be like nails

fastened by the master of assemblies, for there would be few so thoughtless and so vicious as to forget what was said to them by such benefactors at a time so interesting to themselves as the recovery from disease, when the dawn of health and the restoration of their natural powers gave a freshness and beauty to every thing around them. The importance of setting on foot something at Borneo Proper becomes still more striking, when we consider that the whole of this large and beautiful island is invested and hemmed in on all sides by Dutch occupancy, save at this point only; and that they oppose the entry of any thing that might benefit the natives with the most jealous watchfulness. The Prince of Darkness has possessed Borneo, from a period "where the memory of man runneth not to the contrary;" and the Hollanders have lately guaranteed the sole ownership thereof to him in perpetuity. A small portion of its lovely margin is yet left; let those who "maintain good works for necessary uses" consider what may be done ere that also be put beyond the reach of redemption. It would afford an advantageous spot for gaining an acquaintance with the indigenous inhabitants,

as it is in the neighborhood of various tribes who repair thither to dispose of their camphor, beeswax, bezoar, stone, &c. and to get what articles of foreign merchandise they can in return. We saw many canoes full of them, and visited some of their houses, and found them, in manly proportions and comely looks, superior to the Brunese. One of the prettiest little girls I met in my travels belonged to one of these families.

The noble river runs a long distance up into the country, if one may judge from the nature of the mountains in that quarter, as they do not appear to be very lofty, and therefore cannot furnish so great a body of water without the joint contribution of many such ranges. A missionary residing at Borneo Proper would gain their confidence, and teach them that it would be worth their while to treat him kindly whenever he should call at their dwellings. The sorry fellows, who used to accompany us in our flying trips, pretended to be greatly afraid of the wild people, and were always ringing the name of sumpitan, or arrow-tribe, in our ears. But they were lazy as well as great cowards, and therefore little is to be inferred from their conduct. In

some recent remarks made by a missionary who had resided some time at the other end of the island, it is stated that the practice of cutting off heads is not now so fashionable as formerly; as if even here man had begun to be tired of his own abominations. What we saw while staying at the city, was, in a singular manner, confirmatory of this opinion; for a number of deputies or commissioners—if we may use such grave words in speaking of uncivilized men—came to refer some territorial question to the decision of the Sultan. It seems that several neighboring tribes could not agree to some arrangement respecting their limits, a circumstance not to be wondered at where culture has not begun to mark the boundaries of property; and so they agreed to send persons to have the matter adjusted at Bruni, the only place that they knew of in which wisdom and justice were embodied in a form of government. That this was a matter of mutual agreement, the reader may have the same presumptive proof that we had, namely, in the fact that they came together in the same vessel. Now, whatever we might think of the Sultan's competency to decide in a matter of this kind, or the merits of each partic-

ular case, there was something very delightful in the complexion of the whole affair; for here were men sent by tribes renowned for their thirst of blood to plead their cause on the ground of reason and justice, instead of seizing such a dispute as an occasion to whet their fierce tempers, and urge them to fresh deeds of cruelty. They had a wild and rough exterior, with features very strongly marked; their ear ornaments and necklaces of tiger's teeth, and their feather caps, were in keeping with the rest of their outline, and reminded us that a fondness for the garish show of motley splendor is almost universal among the uncultivated tribes of mankind. It was represented that they had come from regions so remote, that this journey had occupied a month, but as they had come down the river, this was a mistake, or they must have loitered by the way. It shows, however, that they had come from a considerable distance, otherwise there would not have been any color for such a statement, nor any reason why the Brunese should have looked upon them as a curiosity. A missionary residing at Bruni, with a little experience in the language of the natives, might form useful acquaintances

at such a time, and might so far ascertain their character as to feel authorized in taking a few presents and a medicine-chest, and returning with them. A few trifles, suited to the native taste, and carried ostensibly as presents, would bespeak the friendly nature of his attentions in terms better understood than words; while his skill in the healing art would be a sufficient guarantee for the security of his person. I will not insist, however, upon the necessity of carrying any thing as a peace-offering; but of this I feel confident, that one would be safer than many, and that arms would only assure the destruction of the wearer.

It appeared, from the tenor of the captain's instructions, that the projectors of the voyage contemplated the possibility of entering into some mercantile arrangement with the Sultan and chiefs, and thus, upon the ground of mutual confidence, prepare the way for the entry of better things. Commerce, of course, was to be the means, and not the end in this matter. To promote this object, presents were provided, an interpreter engaged, who was well acquainted with the language and the people, and nothing omit-

ted which might enable the captain to commence his negotiation with some probability of success. He, however, put a different interpretation upon his instructions, which much embarrassed us in carrying out what we believed to be the wishes of his employers in reference to the distribution of the Scriptures. To attempt any thing of this sort at Borneo, he thought was absurd and dangerous. In our position with him as master of the brig, we felt obliged, therefore, to allow him full scope to his opposition to our designed course, and left all our Bibles on board the brig, taking not even one for our own use, which was a great loss; for reading aloud would have greatly increased our familiarity with the language, delighted those that heard us, and given us many themes for colloquial exercise. During our sojourn there, we had many proofs that the Bible was known by report among many, read, and even studied, by a few. When I say studied, I speak advisedly; for a chief, who brought the thick quarto edition printed at Serampore, read it with great ease and facility, which requires considerable practice, for the sharp-pointed character is very unlike the one used in writing,

and the diction, though faithful to the original, is harsh and untuneable to the ear of a Malay. We were solicited night and day for every thing they saw about us; and finding themselves not altogether successful—for it was impossible to satisfy the demands of such unblushing suitors—they began to ask us for books, which we promised to give them on our return to the vessel. We told them that we had no romances or pretty sonnets to give, nothing but Bibles and Testaments. "Well," said they, "give us them." When I asked if it was lawful for them to read the gospels, they either made no reply, or said, "You promised one, mind you do not forget it." No man made a secret of the matter; the Sultan reminded me of my promise in the hearing of the chief priest, who himself sent his respects and his thanks to Mr. Tracy for his liberality in the gratuitous bestowment of books among his countrymen. The thought never entered any man's head that it was forbidden by his religious creed to read the Scriptures, nor perhaps would any suspicions have come over their minds about it, had they not been raised by others. When the captain had completed his

business, and the minister and a numerous assortment of chieftains had come down to say farewell. I thought I had a most unexceptionable season for discharging my engagements, and accordingly put a few Bibles and Testaments into the hands of the principal persons, and wrote the name of the Sultan and his brothers, who were absent, in a few others, and laid them into a box for Abdollah, a Parsee, who had been specially deputed by the Sultan to take care of his, but our captain thought proper to set his veto upon its passage over the vessel's side. Poor Abdollah, we may suppose, had already begun to antedate the praises he would obtain from the Sultan and the rest of the donees for his zeal in their service. His disappointment was therefore great; and though I said a great deal to soothe him, and gave him a snuff-box, the object of his wishes, he went away with a countenance full of distress and melancholy. The reason of this interference by the captain was stated to be the fear of having his throat cut when he came this way another year.

It should not be forgotten that the minister, in whose hands the entire management of the

nation is lodged, had made himself a party to this transaction, as he sat in my cabin when the books were given away ; and when he saw one of his brothers neglected, asked me to give him a Testament.

At the city we had been unwearied in our attentions to all who applied for relief, and in one case only with but partial success. This was that frightful kind of *impetigo* in the ankle which Celsus long ago pronounced incurable. We could not heal the malady, and custom would not allow the limb to be removed ; but we procured him a comfortable night's rest, instead of pains and ague-fits, which would not allow him to sleep before he came to the palace. Whatever any ill-wishers may have thought, the people of Borneo must remember that we coveted no man's gold, silver, or apparel ; that we gave away many things valuable to ourselves, hoping for nothing ; and that, under circumstances every way calculated to irritate and wound our feelings, we always requited evil with good.

One of the most striking singularities at Bruni is the floating market, composed of a multitude of canoes, which ply along the lines of buildings

and from one side of the river to the other. In most places the buyer must go to the market, but here the market comes to the buyer, and he realizes all the advantage of choice and competition without stirring a step from his door. The medium of exchange is usually large pieces of bar-iron, without any stamp or superscription upon them, every man being at liberty to have a mint under his own roof. The appearance of this unsightly coin, if we may so misuse the term, might seem to intimate that the people are exempt from the love of mammon, and therefore happy in this respect, if not in any other. It is, however, long since I ceased to feel such complacency in the idea of a golden age when there was neither buying nor selling, or in the cumbrous pieces of Lycurgus, for the Spartans have left us nothing to be grateful for; while the Athenians, who were a money-getting people, have bequeathed to us a heritage of every thing that is refined in thought or lovely in imagination. To put us out of conceit with such mean-looking representatives of wealth, it is not necessary that we should make any deep researches amidst the shifting and mazy doctrines of political economy,

nor trouble our heads about those curious *formulæ* by which the French mathematicians have sought to express those laws which obtain among the phenomena of human society; for the little fact, that the money and the thing purchased will be of the same complexion, is sufficient to make the matter clear to the least reflecting. If the money is of a scurvy sort, the goods, if they are the results of handicraft, will be so also; and if it has no impress to warrant its goodness, they will seldom bear any marks to evince the skill and ingenuity of the maker. The bazar at Bruni is a good commentary upon this remark, for we find nothing that indicates taste and contrivance among the poor assortment of domestic utensils; while we see the bounties of nature thrown into a canoe without order or neatness, as if they were intended for pigs and poultry, and not the first fruits and choicer parts culled and laid forth for the use and entertainment of man. Money is a merchandise; we must not expect, therefore, to get a good thing, in the way of barter, for a bad one. What makes this a matter of importance, is the fact, that where there is no art, there is no thinking, little or no enterprise,

without which the people can never find knowledge to fit them either for this life, or the enjoyment of a better. The market is kept by females for the more part, who wear a broad hat called a *sarwang*, which answers the two-fold purpose of hat and umbrella. The shade that is thus produced makes the complexion seem fairer than it really is, and sets off the features to the best advantage; while it affords a grateful relief to the eyes amidst the glare reflected from the water.

The canoes, or gubangs as they are called here, are formed out of a single tree, whereof the wood is soft, white, and easily wrought. They are long in comparison of their breadth, and spring sharply at both ends, so that they move with great celerity from a very light impulse of the paddle, and can, without any trouble, be made to advance or recede at the pleasure of the rower. They are well adapted for the purpose; and while prisoners at the palace, we often longed to be gliding about in one of them; but they are not to be hired, nor should we have been allowed to cruise along the banks of the river without being pursued by a swarm of rogues to exercise our patience with their cowardly warn-

ings, and thus withdraw our attention from the delightful and instructive objects which the goodness of God had spread around us. The baliyung or papatil is an admirable instrument, which we see used in the hewing and shaping of these canoes. At the end of the helve there is a small haft with a laced socket or rattan, into which the shaft of the bill is put; and as it is a matter of indifference, as to its security, in what direction the edge is turned; it may be either a small hatchet or an adze, according to the nature of the work. The bill is about two inches broad, the other parts are in proportion; so that it is one of the handiest little tools that can be imagined for such works, and is a great contrast to their mallet, which is merely a knee of wood without the difference of head and handle. One would be apt to infer from the look of it, that the native had exhausted his whole genius in the invention of his axe, and had none left to suit him with a convenient hammer. It has been hinted that they excel in the casting of cannon, though the best pieces that they have are of foreign workmanship; but as they have no mines or streams where native copper is obtained, they are

obliged to use those small brass pieces of money called the Chinese cash. One of their greatest refinements was of this kind, where the spokes of a wheel were formed by four small guns, and the whole designed to revolve about an axis, and to afford the engineers an opportunity of loading one barrel while the other was fired off, since the effort to recoil would only serve to bring the loaded tube into the required position. Of course the ball would be left to do as it pleased about striking the mark, as the gunner would have nothing to do with range or any other consideration of projectiles; while the difficulty of loading and priming amidst smoke and concussion was never once thought of. I have mentioned this *Skijang*, not only for the curiosity, but to show how necessary it is for a traveller, not only to have an inquisitive turn of mind, but a little common sense withal, or else, like many of his predecessors, he should set down a thing as a most ingenious invention, which, after all, might prove to be a great absurdity.

The domestic life of the Brunese acknowledges but few of those comforts which we embrace under the designation of home. A mat to lie down

upon, a little rice with some curried fish or fowl, eaten with no other implement than the fingers, and a *tampurong* or cocoa-nut shell of water, compose the principal part of those things that are destined to feed and nourish the body.

They display, however, much more refinement in their dress; and though they have been very much imposed upon in the purchase of worthless finery, they have taste and discrimination enough to see the value of a garment that is made with art and of good materials. A black coat made in Bond-street might have been sold to one of the chiefs for a very high price, for a first and second refusal to part with it were no answer to his repeated solicitations. The Malayan turban is an elegant head-dress, and therefore they are willing to continue its use; but in the rest of their apparel, they prefer European when they can obtain it.

The females in their harams make their clothes, and imitate, to the best of their power, European models; but the chiefs would often point out the difference, and quote it as a reason why they prefer the loan or gift of ours to the wearing of what belonged to themselves. I

would lay some emphasis upon this circumstance, as it is one among several others which prove their fondness for what is foreign, and consequently their willingness to learn and to imitate. Many of their questions about things in England and the United States were very creditable to their understandings, and evince something like a spirit of inquiry, which is one of the best symptoms in a heathen mind. I and my fellow-laborers find it not in China, though it is often and most anxiously sought for; when we meet it at Bruni, we therefore value it the more. The pleasure which they take in hearing a foreigner read their native books is remarkable, as if the imitation of their tones was more agreeable than reality itself. They gathered round us, and listened till we were tired; and to show that they understood what they heard, very few questions about the meaning of uncommon words failed of an answer. We took this as an earnest of that treatment which a man well versed in Malay would have when he had a mind to indulge them with such acroama or recital.

Knowledge and general information must be necessarily very limited and poor among the

Brunese, since all they know of the great world around them is chiefly learned from the few hints they pick up in their visits to Singapore. Their reading is confined to poetry and romance, with histories mingled with a great deal that is fabulous and absurd, so that they find little to instruct in such kind of lucubrations. The recital of verses in a modulation between singing and reading, is a favorite amusement, and some of the more gifted apply themselves to the composition of original poems. These are generally written upon a piece of board, whose breadth corresponds to the length of a verse, as paper is very scarce among them. Of this kind, written in the native way, I have preserved a specimen, to show, by a sensible proof, that they sometimes employ their fancies and their ear. That peculiar kind of stanza called a *pantum* is much in favor, and nothing could oblige them more than to lend them a book containing any that were new to them. This stanza consists of four lines; the two former make an allusion to some familiar event or daily practice, the latter half gives a moral or sentimental turn to the allusion.*

* The ancient poetry of the Chinese is not without exam-

When I first read them, I felt a great affection for their style ; but this, perhaps, might be ascribed more to one of those unaccountable partialities which sometimes grow up in us, than to the real merits of the production. But it was not till I heard them recited at Borneo that I could form a correct notion of their metrical effect, and this is owing solely to an observance of the pause which divides the line in two hemistichs, like the cæsura in English poetry. The existence of this pause constitutes the very spirit and harmonic beauty of the line ; without it the recitation is flat and dull ; with it, the effect is such that the ear unused to the language would perceive something that was peculiar and striking, though the hearer might be at a loss to say what that something was. We know that a *senavius*, or a line in the dialogue part of a Grecian drama, cannot subsist without a cæsura, the whole charm and virtue of the line depend upon it. It is worthy of remark, that those who had gained the highest pinnacle of refinement, and

ples of the same kind of stanza. In the ninth chapter of the *Shang lun* we meet with a beautiful specimen, but the pith is lost in translation.

those who are just beginning to climb the ladder, should, under the similar circumstances, have been precisely of the same way of feeling. It is one example among many that might be adduced to show, whatever may be said about the excessive diversity of tastes, that in fundamental particulars there is often an exact correspondence of choice.

They seemed fond of having another read, especially a white man, as we observed elsewhere; as if the words and sentiments came best from the mouth of a stranger. We were, consequently, often pressed to read, and found them well contented to listen to disconnected sentences out of a dictionary in the absence of regular matter. A prudential consideration induced me to leave my Malay Testament and Bible behind me, which I then regretted exceedingly, and resolved, in my own mind, never, under the like circumstances, to give place so much to another's business as to forget my own. One who could read their language with grace and fluency would never want hearers, while he read to them the life and death of Jesus Christ; nor when he insisted upon repentance, as inculcated in that

book, would he meet with any other reply but that, from the prevalence of evil habits, they were unable to forsake and renounce their ancient practices. A prince often asked me to give him a poison to carry about his person when he went to battle, that in case he were surrounded he might escape the mortification of being killed, by killing himself. I told him that a brave man would fight as long as he could use a weapon, and when that was no longer possible, submit to captivity with fortitude and patience. He admitted the soundness of the advice, but still seemed to think that he might be placed in situations where such a drug would afford timely succor. Finding my arguments unsuccessful, I reminded him that God had forbidden self-murder, which at once put an end to his solicitation. This made me wish that I had resorted to this argument before, not only in this but in other cases.

Most of them wear one or more charms or amulets about them, to which great virtues are attributed; but I believe that the more intelligent do not attribute so much efficacy to the thing itself as to what God is thus bound to do for the

wearer. "If you wear this," say they, when speaking of an amulet, "you may be in such and such trying circumstances, but nothing will hurt you, for *Allah-tulong*—God will help you." These amulets are generally presents made by some of their older friends or relatives, so that their antiquity, and the character of the giver, conspire to make them sacred. They are of various kinds, —a book, or handkerchief, or a string of little squares of cloth,—each square, having been presented by some honorable person, either single or together, make up the sum of this *azimat* or charm, which the wearer places upon the crown of his head every time he lays forth or restores it to its place again. The placing it upon the head is a mark of respect well understood among them, and the minister, when he receives the written commands of his master, lays them upon his head to intimate his supreme readiness to carry them into execution. Thence the word used sometimes for obedience, signifies, literally, to lift up and place something upon the crown of the head. The translators have used this word for obedience. Philemon 21, "having confidence in thy obedience." With this custom in

our recollection, St. Paul appears like an eastern raja, and Philemon a feudal prince or vassal who owed him homage and fealty. In practice, it is not easy for us to form an adequate conception of the ideas conveyed by this word; for in our western tongues we have no term that corresponds with it, since we are not taught to receive the mandates of a sovereign with the same worship and prostration of thought that we accept the behests of the God of heaven. The mode of presenting any thing to a superior is equally studied and ceremonious. The letter, or whatever it be, is laid upon both hands, brought towards the forehead, and then lifted into the hands of the receiver; the giver, as usual, sitting upon the ground at the feet of the great man. These transient remarks are among the evidence which might be cited, among others, to show that they have little taste for intellectual refinements, are practised in the outward forms and dues of politeness, and entertain some sentiments of religious awe. A man of Borneo, if he ever reflects seriously about the Deity, concludes that he is supreme in wisdom, goodness, and power; but thinks, withal, that he may be pacified by rites

and the external forms of obeisance, while the heart is far from him. But as there is no true religion in the soul, so far as we could judge, there is no truth, no courage, no generosity, nor any other solid quality, which, after the reduced standard of this world, is either great or noble. There may sometimes be the outward show and semblance of these things, but even this extends no further than interest or custom suggests to them. They harbor a pirate, though the common people seldom speak of him but in terms of disapprobation, because they share in the spoil; but they abstain from acts of piracy themselves, that they may stand well with Singapore. The Sultan wanted to detain Mr. Dickinson and myself, but feared the consequences; he would not suffer another subject of the British government at Singapore to come away, because the man, being a Malay, he thought he could do it with impunity.

No jealousy seems to be manifested over the rites of the Mahommedan religion; on the contrary, we were invited by the Sultan to be spectators, and more than once appealed to for a decision in their favor. Nay, he was on one oc-

casion so liberal, that he would not be pacified till he saw both of us with a tambour in our hands, and then applauded vehemently because my instrument moved in cadence with the rest. This piece of success immediately relieved us from our disagreeable duty, and we were never invited to join afterwards. On the Thursday evening, which is the vigil of the *Hari Jumat* or Friday, the Mahommedan Sabbath, the members of the household assemble, sit down in a circle, with a book and a light in the centre, and chant a few scores of verses; while each beat a small tambour as an accompaniment. This choral entertainment occupies between two and three hours, and is often associated with a good deal of waggery, as if the performers were laboring to render the whole as great a jest as possible. It was during this part of their exercise that the Sultan insisted upon finding out whether we had any sense of rhythm or time. A blind prince was among the number on the same occasion, who ever used his powers with great zeal, while one of his companions struck within an inch of his face, and the rest laughed heartily at the composure of the poor fellow when mischief was so

near him. When this part is finished, they pass into a kind of minor mode of a dull and lamentable character, which prepares the way for the finale, wherein all stand up and repeat the faith of the Mahommedan creed in three words. The repetition is simultaneous, and is delivered with a deep bow; at first in the tones of a rational creature, but as the celerity of utterance is continually increased, it partakes more and more of the brute, till at last it resembles that sudden ejaculation made up of something between a bark and a grunt, which a herd of swine gives out when unexpectedly aroused from their slumbers, while the motion of the head in cadence with the noise is ludicrous in the highest degree. This mad work lasts till the whole party is quite exhausted; but such adepts are they at it, from long practice, that they are in full vigor a long time after we should expect to see their heads fairly shaken from their bodies. The effect that it has upon the mind of a stranger is indescribable, and only equalled by the compassion which a good man ought to feel for wretches who are so far beside themselves as to think that the Deity will be pleased with a service which is not

fit to be offered to the meanest of his creatures. In approaching his prince, the Malay couches to his seat, and then raises his hands as an act of salutation in a manner peculiar to himself; but in this there is nothing that strikes us as uncomely, while every attitude bespeaks his veneration. Any words or gestures that were uncouth, wild, or boisterous, would place his life in jeopardy before a merciful prince; and if he were like the average, it would draw inevitable death upon him. How well is it said in Malachi, "Offer it now unto thy governor; will he be pleased with it, or accept thy person? saith the Lord of Hosts." How beautiful, thought I, are the forms of Christian worship, how they at once commend themselves to the understanding and the heart, while this shocks our feelings by ugly gestures and brutish noise, such as are never imitable, except by mad men and idiots. I mention the ridicule with which they treated their own modes of worship while engaged in them, as affording, perhaps, a glimpse of hope, that they do not adhere very closely to their minds. But, however they may seem to slight it themselves, I dare say they would take offence if one should make any stric-

tures upon its absurdity. The apostles of Ephesus were not blasphemers of their goddess. They set forth the character and work of their master, knowing that whenever he was enthroned in the heart, Diana, and all the fascinations of her worship, would be deposed and turned out at the same moment. I would have a missionary copy this unexceptionable model, employ his whole attention in storing their minds with principles of divine truth, and, as by the teaching of the spirit they fastened upon the conscience, see with composure and secret triumph the wretched babblements of superstition disappear of their own accord. When a man assails any favorite traditions or long-cherished rites, as a first step towards conversion, he mistakes his aim; for the individual unused to reason, substitutes wrath for argument, and though in sober moments he may not care a straw about his own religion, he becomes, after such a challenge, a most zealous advocate for all its absurdities. He should rather supply the shattered powers of intellect with a little knowledge and a few courageous thoughts, that the poor creature may be able to make his own choice and abide by it, and then his foolish

customs would soon be forgotten. I would have the missionary who shall settle at Borneo abstain from any attacks upon their religious prejudices, and endeavor to fill their minds with something from the word of God, while he taught them whatever else it might be useful for them to know. Besides, we can hardly trust ourselves in such proceedings, a laugh, a sneer, or a sarcastic reply nettles our feelings; we fall to wrangling; and then, instead of shaming our adversaries, we blush at our own want of temper and Christian forbearance.

METEOROLOGY.

It was my daily practice to note the barometric column near its highest and lowest altitudes, but I do not think the result worthy of being put into a tabular form for publication, since to have data whereon we can erect a theory respecting the nature of those curves in which the semi-diurnal elongation moves, we must have observations made every half hour by experienced persons, whose sole business it is to watch the instruments. I alluded to this subject among some remarks upon Macassar in the Repository for February of the present year, 1838, and cannot forbear endeavoring to impress upon the scientific the importance of sending individuals to make such observations in different parts of the world. The maximum height occurs about ten, or a few minutes before; but I observe that it is not constant in this respect, the highest point of

curvature does not always coincide with the same point of time, or the axis of the curve does not remain always in the same plane. Future observers will have it in their power to determine the nature and extent of this libration, and the meteoric changes with which we may suppose it to be connected. A limited experience leads me to believe that there is a connection of the following kind, which I state to exemplify my meaning. If the column begins to descend some time before ten o'clock, the tendency of the weather is from fair to foul; if, on the other hand, it continues to rise for an hour after that period, the tendency of the weather is from foul to fair. The latter often happens at the crisis, or foulest part of the weather. Of this I have an example while writing these remarks. During the last three or four days the mercury has been falling, the atmosphere been soft and serene, with now and then a symptom of change. This morning, at sunrise, the apparent vault was filled with misty clouds, and it rained very hard before eight. The barometric column did not begin to descend till nearly half past eleven, then fluctuated, and seemed very unwilling to move downwards.

All the while it was raining, with now and then a sickly effort at sunshine; but after a little, things will mend, and in two or three days we shall regain our fine weather. Near the equator the maxima of ten at night and ten in the morning are upon an average equal, but as we change our latitude, the maximum at night falls short of the maximum in the morning; so that we have a diurnal as well as a semi-diurnal cycle—the former becoming more and more apparent, as the latter tends towards disappearance. The semi-diurnal variation is generally somewhere between $\frac{1}{10}$ and $\frac{1}{5}$, seldom above the latter. On one occasion, however, it was nearly $\frac{1}{2}$, and I began to think myself on the point of making some notable discovery in reference to the atmosphere near the N. E. coast of Borneo, but found, afterwards, that the depression was owing to the sun's rays falling directly upon the Sympiesometer, and thus giving the gas in the tube an elasticity which was not due to it. I then recollected that I had witnessed a sinking of the column by holding a candle near it, when we wished to consult it at night on our passage out from England. The assumption, therefore, seems to

be true, that equal increments of heat do not communicate equal increments of elasticity to the air and the gas, when the sun's beams or a brilliant light acts directly upon the tube in which the latter is held.

Within the tropics, and especially within fifteen degrees of the equator, the barometer is seldom visibly affected by a squall; nor can we perceive any change in the sympiesometer where the range is much greater. We are not, however, to suppose that no alteration takes place in the density of the atmosphere because it is not appreciable by the common instruments. We know that it is very small, a circumstance that is naturally connected with the very limited extent of a squall, and probably with the short distance which the disturbance reaches above the earth's surface.

Among the natural appearances near the equator, we notice the fixidity, and the varied configurations of the clouds in fine weather. We see them moulded into every diversity of form, and of a texture so dense, that they seem as if they were destined to be permanent decorations of the evening sky. Connected with this cir-

cumstance is a superior brilliancy of coloring, —blue, red, and umber color, in all their life and freshness. These effects appear to vary as the mean temperature, and consequently are proportional to the co-sine of the latitude. These clouds are not only the glory of the heavens, but the children and pledges of fine weather. Their structure is due to electricity, excited by a change of temperature; for they are seen in the hottest weather, and never pass into the form of a rain-cloud without thunder and lightning. Clouds in general afford the best hints for predicting the state of the weather in time to come, and when we study them with a reference to the weight of the atmosphere and the relative heat of the invisible vapor, they will prove almost infallible guides in this respect. In pursuing our observations, we must not forget the effect which their site upon the imaginary sphere has upon their appearance. To deduce their *real* from their *apparent* form, is a problem which every student in meteorology must solve for himself, though I think he will find some assistance by attending to the following, which are the more worthy of his acceptance, as I am not aware

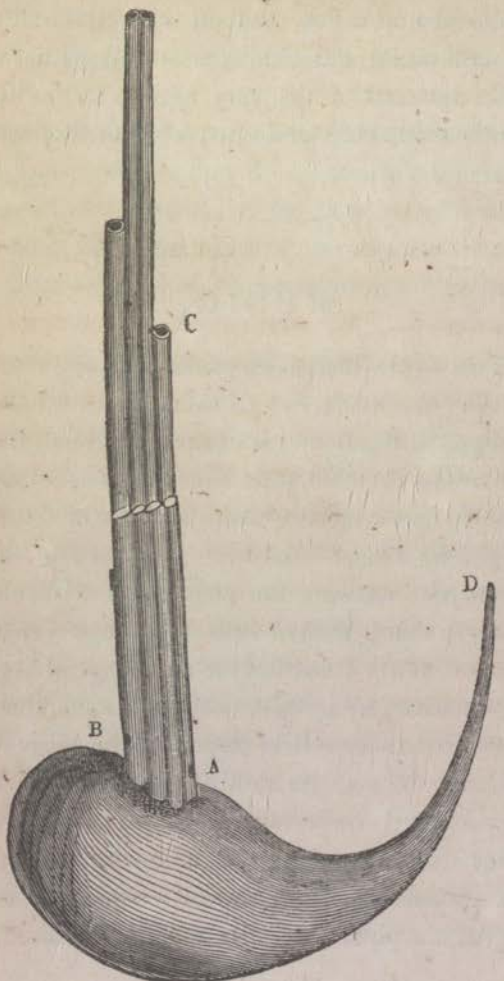
that any one has hitherto taken any notice of the subject. Let a semicircle be described, with a radius of three or four inches, draw the diameter, and then upon the arc at 5°, 45°, and 90°, depict loose sheets of vapor in lines parallel with the diameter, and similar in density to each other. If the eye be supposed to be at the centre, and a line be drawn from it to the arc, it will be obvious how the same cloud may assume the shape of cirro-cumulus, cirro-stratus, and stratus, just as it happens to be overhead, at middle altitude, or near the horizon. He will perceive, from the diagram I have suggested, that at 45°, the visual line does not fall upon the further edge of the sheet, but runs obliquely across it—two things which, taken together, will account for the even texture and greater density in the lower parts of the cumulo-stratus. A little theory and a little practice will show how much clouds may be modified by their situation, and the importance of taking this matter into account when we register, or reflect upon what we see in the heavens. The theory of Hutton, that clouds are formed by the meeting together of currents differing in temperature, is almost a

matter of daily experience; and we see an inverse, but a beautiful proof of it, in the disappearance of those highly electric clouds which we described at the beginning of this paragraph. We have said that they do not pass into the nimbus without explosion; yet they vanish oftentimes as the temperature of the day rises, and supplies them with an element, to the lack of which they owe their origin. But, though unseen by us, they have not, perhaps, wholly lost their composition, but are ready to resume their fantastic but lovely forms as soon as the additional spring is drawn from them by that decline of temperature which ushers in the evening. The belief that they are in regions near the equator, still existent, though invisible to the eye, is supported by the shortness of the time in which they form or disappear in the finest weather, when no traces of counter-currents, or any atmospheric disturbance, can be seen. The connection between lightning or "light" and the nature of clouds, is adverted to in the book of Job, and their use in the economy of second causes touched upon with great beauty and inimitable accuracy; so that when we pry into and

admire the formation of these meteoric bodies, we do it under the countenance and with the encouragement of the very highest authority. See the thirty-sixth and thirty-seventh chapters.

MUSIC.

THE figure that accompanies this page represents an instrument which some of our number obtained at Bruni, and is composed of reeds like the *avena* of the Latins and the συρινξ of the Greeks; but it has the addition of a wind-chest, formed by a small calabash. The neck of this wind-chest answers the purpose of a mouth-piece, so that it is filled with air through a small aperture at *d*. I had not the advantage of hearing a native play upon it, nor was it mine, that I might satisfy myself in respect of the mode of stopping the ventiges or air-holes by actual experiment. I conjecture, however, that *three* notes are produced by the following method: 1st. By inflating the instrument without stopping any of the pipes. 2d. By applying the thumb


C
D
B
A

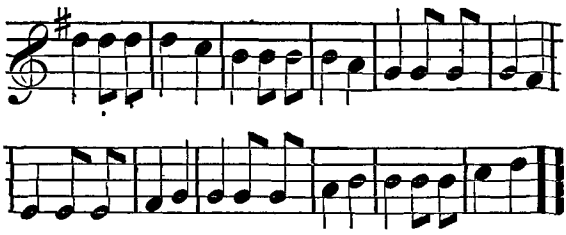
to A, and stopping the other three reeds at *c*. 3d. By applying the thumb to B, and stopping the other three reeds at C. The compass is in this way a very short one, but it is made up by the sweetness of the sound; for it had a charming utterance when blown by one not used to the instrument; what effect it has in the hands of the inventors, I wish it were in my power to inform the reader, for my own sake as well as his. It is the more curious, because it exemplifies an early, and, we may say, an original attempt at harmony in a single instrument, and thus fundamentally embodies the principle on which the organ is built. We see in the longer reeds a provision for effecting the harmony in their *three* different lengths, corresponding to the three notes; though it is probable that the native performer can so manage these longer reeds as to have three or four tones sounding at the same time. Perhaps the organ, or עוּגָב of Jabal and Job, 30, 31, were of this construction, and obtained the name of *sweetness* from the harmony they yielded. Harmony is, indeed, the great *sweetener* of music; for two notes, not very agreeable when sounded apart, are wonderfully

sweetened and mellowed, if, when struck together, they produce a consonance. Dr. Wallis denied that the Greeks had any harmony as we understand the use of the term, and certainly I have read most of what remains of their musical works without finding any thing to overthrow his opinion. The resolution and interweaving of harmonies, and the whole "world" of modern counterpoint, they seem not to have cultivated, from a regard, perhaps, to that admirable simplicity that runs through all their performances; for we can hardly suppose their ears were less susceptible of a pleasing consonance than the ears of a Daiak, or a native of the Society Islands, especially since they have displayed so much acuteness in the investigation of harmonic sounds in general. Be that as it may, I am happy in having the means to show the reader that harmony exists among the indigenous people of Borneo; and not merely in the floating sounds of a traditional air, but embodied in the simple and beautiful instrument represented before him; Should I visit that island again, I hope it will be in my power to devote more time to acquiring a

knowledge of its use, and the tunes that are played upon it.

In our travels we acquire a habit of making things throw such a light upon one another, that at length every fact, great or small, becomes interesting as well as instructive in its turn. The boat-song, or the ditty that the laborer sings while he plies his task, which at first fell uncouthly upon the ear, in time becomes not only agreeable by habit and association, but an object of scientific investigation. When I was in the Society Islands, I learnt two short airs, which had two remarkable properties, in that they were both within the compass of a *fourth*, and their semitone fell between the *first* and *second*, instead of the third and fourth as in our modern major mode. They had something peculiar about them, but it was neither displeasing nor unsatisfactory to the ear. A thousand loose epithets would have conveyed no accurate idea of that peculiarity, while a very short process of musical analysis defines what it is, and fastens it in our minds for ever. The reader is perhaps aware that the Grecian musical system was made up of tetrachords or *fourths*, which Aristoxenus, if I

remember rightly, tells us somewhere is the most elementary of the consonances. I quoted this passage some years ago in the Gentleman's Magazine, but cannot find it now to confirm my recollection, though in another place I see he says it is the least of them. Ἐλάχιστον μὲν, τὸ διὰ τεσσάρων. συμβάινει δὲ τοῦτο τῃ ἀυτοῦ φύσει ἐλάχιστον ἶναι. Liber II. meibom, page 45. By successive improvement, music is apt to lose some of its original character, so that it is not easy to say, without investigation, what were its essentials in the first periods of its invention; but we find it in its very beginnings at Tahiti, and the rest of the group, where it has stopped within the fundamental consonance. The ears of these people were not incapable of appreciating harmonic agreement and melodic division, for they used, in singing or playing these native airs, to accompany each other in major and minor thirds, and they learnt the airs taught them by the missionaries with surprising facility.

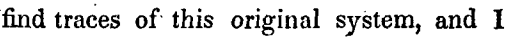
At Bruni I learnt the following little air, which the lads and young men about the palace used to play upon a Jew's harp made of bambu:

It had a melancholy but a pleasing effect, especially when two or more were moving in cadence with each other; but it is evident at first sight, that this is not susceptible of any analysis by a reference to the principles of modern music, and one unused to such matters might therefore throw it aside as an odd and knotty thing not worth the trouble of a second consideration. But this would be a mistake; for if we express the notes by letters, we have two tetrachords or intervals of a fourth, with their half-tones between the second and third notes, thus:

$$e \; \sharp f \frown g \; a \qquad a \; b \frown c \; d$$

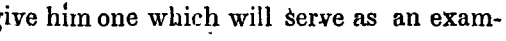
The slur marks the situation of the half-tone. We have resolved the scale, therefore, into two symmetrical halves, and found that it is composed of *two conjunct* tetrachords. This is one

step farther than the Society islander, who had only one; and yet both of them complete in their kind, and both exemplify, in a striking manner, what the Greeks have written upon the subject. No one would have thought of going to those remote regions in order to find illustrative specimens of what he had read in classic authors, and yet I have discovered the advantages of it in my own case, and trust that this remark will not be without its value to others. We observed that the melody of this air had something melancholy about it, which we can explain by considering, that in the position of the half-tone, it agrees with our minor mode, which, as we all know, is generally of a pensive or doleful character. The lyre among the ancient Greeks had only *seven* strings till Pythagoras added the eighth, and so completed the octave, as the learned reader will see by turning to what Nichomachus says in the 1st book of his manual. The principal harp among the Chinese has only seven strings; and a curious Pandean pipe, used by the natives of Laos, has the same number of reeds. By such a comparison we convince ourselves that the origin of the tetrachord, and the practice

of putting two conjoint tetrachords together, are both of them founded in nature. The Chinese modified their system in a way somewhat peculiar to themselves, which I hope to explain in some future number of the Repository, just as in later ages musicians remodelled the system they had received from the Greeks. Among northern nations of the Teutonic family, we can judge, in some measure, of what music was, from those beautiful relics of antiquity which we have in the Scotch airs. In them the musical reader may find traces of this original system, and I can give him one which will serve as an example. The signature of Roy's Wife, in two sharps and *f* for a tonic or last note in the melody, are plainly "of no kindred," and have nothing to do with the octave. But if the whole compass of the air be resolved into tetrachords, we obtain three symmetrical groups, that will speak for themselves and tell their own story:



or they may be placed thus:



Here are three tetrachords, or groups of four sounds, which agree together in having the half-tone between the third and fourth of each. One of the engaging features, that insensibly made us so much in love with the Scotch music, consists, then, in its antiquity, and a faithful preservation of some traces of what it was in its childhood, when all was fresh and gay, and when the mind, unchecked by custom, wandered at large amidst the untried purlieus of nature and experiment.

NATURAL HISTORY.

Manis macroura.

A SPECIMEN of this scaly animal was brought to me at Bruni, by the order of a prince, who, *ore rotundo*, might be styled admiral of the fleet. The common Malay term for it is, pangolin; which, if literally translated, would be *the roller*, in allusion to the faculty which they have of rolling themselves up so as to cover the vulnerable parts of the body, and thus present on all sides one

entire coat of mail. Our acquaintance at Borneo insisted that the proper name was *tanggiling*, which is compounded of *giling*, to roll, and *tang*, equivalent, I believe, to *pang*; and implies the person or thing that is the agent or doer. The under-parts of the body being destitute of scales, it, for purposes of self-defence, places its head between the hinder legs, while the broad and massy tail is brought over the head and muzzle, to render security doubly sure. In this attitude it sleeps the whole day, with a soundness which neither fear nor pain can interrupt. A thong of twigs had been tied around the base of the tail, which, on both sides, had rent the flesh in the animal's efforts to maintain its position. But the smart did not interfere with its slumbers. This hurt it got, not in making any efforts to effect its escape, but from a determination to resist the will of those who sought to change its position. This it did with no small chance of success; for its long nails were applied with so much force and firmness to any thing within reach, that the strength of two natives was not sufficient to break the hold, though they were hauling by a line attached to its wounded tail.

At night it was very lively, running to the utmost length of its tether in quest of some hole to escape by. They told us that it rests upon trees by night, which I can easily believe, for the length and crooked nature of the claws may fully enable it to do so. Besides, when its noise has awaked me, I have seen it run up the boarded wall of the hall of audience in which we were staying.

It lived six days without food, as I was expecting some spirits and a vessel to put it into; but when opened, the ants found in its stomach were broken, but seemed not to have undergone the process of digestion, so as to lose any part of their texture. Whether this was occasioned by confinement, or any other cause, I cannot say, but the fact surprised me very much. The stomach was half filled with fluid, and the ants were floating in it. The stomach was large, and may be compared to the craw of a fowl in reference to its size and membranous structure, an analogy that becomes more intelligible when we consider the secondary stomach, which, though it appears as a kind of appendage to the first, is, on account of its muscular nature, more

properly a stomach, and may be regarded as corresponding to the gizzard of a fowl in use and conformation. In the first, the ants float at liberty, somewhat broken in the swallowing, perhaps; in the second they show marks of having undergone a process of trituration. The alimentary canal has but a small bore, and, as usual, forms a border upon the mesentery. The heart is almost cylindrical, and lies in a direction nearly crosswise. The liver is large, and composed of several lobes, and the gall-bladder is lodged in a notch of one of them. The kidnies are also large, and have an appendage which rests like a nest upon the upper part. The rectum or lower intestine is more than a foot in length; and in texture, size, and appearance, differs much from the rest of the alimentary tube. Its inner coats are gathered up into folds and cells, and thus in use and office supply the place of the urinary bladder. The external orifice is surrounded by a rim of more than an inch in diameter, and, in comparative size and form, resembles that of a fowl. Near this rim, within the folds of the sphincter, we find two oval sacs, full of glands, which secrete a liquid with a

musky odor, and gives to the whole animal a native perfume without art or trouble. To the eye they seem like a couple of little bags filled with beads, not loose, indeed, but formed out of the filmy web that lines the interior. The natives ascribe great virtue to these organs, but their faith is probably merely nominal, for they would give all the little bags of this sort that ever existed for one dose of the white man's medicine. Of the organs concerned in the propagation of its kind, one lies upon the intestine just described, and is marked by a small nipple-like protuberance externally; the other, in size and shape like an olive, just under the margin of the ilia or hip-bones. The stem of the tongue is more than a foot long, and is altogether a very curious object. This stem is composed of direct and oblique muscles, so contrived that it is drawn into a sheath formed by itself. By the contraction of these muscles, which lie upon it like so many folds, the tongue is thrust out as an arrow from a bow. Two very large glands are seated upon the upper part of the chest, which empty themselves by several tubes into a common duct, which has a bore as large as a

common goose quill. This duct enters the stem of the tongue, and, after running a good distance, issues in a star of orifices upon the upper surface. Thus a plentiful supply of viscid moisture is provided, and conveyed to the very part where the operative part of the tongue commences. This star of orifices is favorable to economy as well as the distribution of this natural birdlime; and seem to tell us that nothing was omitted or forgotten through haste or negligence by Him who is perfect in knowledge.

The scales of this animal, which overlap each other like the tiles upon the roof of a building, deserve to be mentioned; not that we should admire their singularity merely, but also consider their nature and origin for our edification. We find by holding them under a magnifier, that they are formed by hairs agglutinated together, which the eye can trace as they run side by side in a series of parallel lines. And, lest we should distrust our own conclusions in this respect, and think we had substituted the etchings of our fancy for the laws of analogy, we actually find a pair of bristly hairs at each side upon the under part of every scale, left there, as

it were, to tell us what had become of the rest. We are thus enabled at once to see the relation which its natural garment bears to the hairy vestments of quadrupeds in general, and to explain to our own satisfaction the process of that change which it has undergone.

We have already hinted at one or two affinities which some of the internal conformations have to corresponding parts in the feathered race, and it will not be useless to throw the few items of relationship into a short recapitulation. We found a likeness in the size, structure, function, and termination of the lower intestine to the cloaca of birds. We observed, also, that there was a striking resemblance in the nature and magnitude of the first and second stomachs to the craw and gizzard of gallinaceous fowls; though it should be stated that there was nothing like, that horny lining which is the principal characteristic of the last-mentioned organ. Even in the scales, the similarity to feathers is not altogether fanciful, though the beauty and exquisite workmanship of one so far excels the simple plainness of the other. They agree in their arrangement, in being placed one over the

other in an imbricated manner, as well as in their great lightness and elasticity. Both are formed of hairs, which in one case are merely cemented together, and in the other wrought with the highest touches of elaboration. In the tongue, we have a curious specimen of analogy with those of the woodpecker and humming-bird, in which it is capable of being protruded to a great length, and is retractile within a sheath formed by the tongue itself, just as we have seen in the tanggiling. The tongue of all three is applied to the same use, namely, that of feeding the possessor by ensnaring insects. The tanggiling darts his into an ant's nest, the woodpecker slides his upon the bark of a tree, and the humming-bird thrusts his into a flower, in quest of its prey; for the last devours the honey-suckers as well as the honey itself, as I learnt by opening the stomachs of some when I was at Rio Janeiro. In both cases the jaws are prolonged into a sort of tube, and are destitute of any teeth. On each side of the under-jaw in the tanggiling there is a lappet near the end, which helps to deepen the channel, and thus to

increase its resemblance to the under mandible of a bird.

Buceros Cavatus, or Concave Hornbill.

While at Nanning, a town about sixteen miles from Malacca, a young bird of this kind was brought, and finally sold to one of our party. It had not yet attained its full growth, nor had the bill, though very large, gained the appendage that surmounts it near the point of junction with the head. The head, wings, and breast, are of a dull, unglossy black; the belly and under parts white, as is also the tail, with a black bar across it. But it is not in the colors, nor in their disposition, that we find any thing to admire, but in the enormous bill of light material, which seems at a superficial glance to be only an incumbrance. There is no doubt, however, that if we were permitted to follow it through all its economy, we should come to the conclusion that it is admirably adapted for the purposes required. Nay, in the short and necessarily very imperfect acquaintance that I was able to cultivate with it, I observed, that as the bill could be moved as freely as if it had been only one half

the size, so its magnitude was rather an advantage than a trouble. The adroitness with which it disposed of a plantain, five or six inches long and an inch in thickness, gave me an idea of its usefulness. As it swallows the food without division, strength is not therefore required; its food is often massy, hence the convenience of large mandibles. If, however, we cannot account for the height of the bill and the entablature with which it is crowned, except by saying that it is an ornament, or intended to give a resonance to the voice, we can show that its Maker has not forgotten to provide against the inconvenience of having so great a weight stretching the muscles by which the head is kept erect. The wings have the upper edges so advanced, that a hollow is formed between them, and in this rests the head, cushioned upon the feathers of the back. Thus it reposes in a comfortable nook, with the bill so directed as to coincide with the axis of the body, and all preponderant disposition to bend forwards is obviated. This is the attitude of rest which, though singular in appearance, is very convenient. The round eye has a peculiar expression, and is apt to give rise to very comi-

cal associations in the mind when the spectator attempts to give it reason and intelligence. The voice is composed of the transient blast of a bugle and the sudden hiss of an exploding sky-rocket. It used to utter its calls periodically, without any obvious reason, as if to relieve the monotony of its still and melancholy habit. As I sat near its perch, busied in tracing some of the handy works of nature, its strange and sudden intonation often startled me, and interrupted a train of reflection. When food is offered, it shakes its head in a very grotesque manner; but whether it be owing to the eager appetite of a young bird, or the usual manner of a full-grown adult, I cannot say.

Chabak. The Goat-sucker of the Malay peninsula.

This light and elegant bird makes its appearance soon after sunset, in pursuit of its prey, the moths, that come forth to take their pastime in the night. Its flight is like that of a hawk, the wings moving with great rapidity, while the bird dips and rises as if preparing to pounce upon its prey. The mazy, zigzag flight of the

moth renders such measures necessary, else the hunter would have but little chance of taking his game. The voice is shrill and grating, not altogether unlike the sounds uttered by a tern or sea-swallow. And, upon examination, I was struck with the similarity of form and disposition in the muscles that are employed in producing the sound. They run some distance upon the windpipe, above the point where it divides itself into two branches, called the bronchia, and then in a large arm on each side, reach to the sides of the neck. The gizzard, and all the internal parts, were covered with fat, a circumstance connected with its economy, and not accidental; for I find that birds of different lands are not alike in this respect. The plumage was of a rich variety of black and gray, with an opalescence of burnished green. One cannot fail to observe the delicacy of the martin and swallow in their shape and feather, and see that every adaptation contributes to render the whole neat and elegant. Naturalists have placed the goat-sucker in the same family, and we have a form constructed upon the same model, built for rapid and varied evolution. It is not the splendor of

the color, but the neatness of the arrangement that pleases you; while the nocturnal habits suggest an obvious relationship. In Nanning, a province lately added to the settlement at Malacca, we saw this bird hovering over the rice fields like a hawk; whence one of the names in provincial English is night-hawk. A friend, who is an excellent marksman, shot one at my request, that fell nearly into the chaise in which we were riding.

Pitta brachyura.

A bird of this species was brought to me while at Nanning. The genus is characterized by the shortness of the tail, length of the legs, and the splendor and contrast of coloring. The scapulars and tail coverts are blue; the feathers under the tail scarlet; the head black and brown. The plumage on the back has a metallic green; the throat is red; and the under parts yellow and tawney. A black line about the neck, and running down the breast, answer the purpose of necklace and pendant.* The economy is partly

* It has a tail, though very short, and colored with black and blue. To this extreme shortness the term *brevis* of Buffon and *brachyura* allude.

indicated by the length of the legs and the comparative shortness of the wings, from whence we might infer that its habits are much upon the ground, and hence running fast is of more importance to it than a swift flight. The Malays call it by the fanciful name of *mertuak polandok*, or "the deer's relative by marriage," and assign as a reason for this name, that it is found in the same place where the deer makes her lair. Whether it be owing to any friendship between them, or a similarity of choice and pursuit, I know not; but there are, perhaps, more reasons than my informants were acquainted with. I am very fond of collecting little stories about natural objects, and record them with as much care as I should the muniments of an estate; as they are not only descriptive of the human mind, but often refer to some of the most striking peculiarities in their history.

Among the entertainments of nature in Malacca, is the *tampua*. Its nest is formed by the interlacing of grass bents, and is shaped like a bag, with a long neck, with an opening on one side near the bottom. The word tampua generally corresponds with tailor bird; but as that

word applies to more than one species, there is a difference in the accounts given of the nest. The upper parts of the bird are pale green, and the under yellow. The bill is long and slender, and very neatly finished. Its length enables the wearer to perform the operation of sewing in the composure of the nest. The claws are long; but when I sat down to make a sketch of the bird, the thievish ants had run off with the greater portion of the feet. The attitude of the bird is peculiarly erect when alighted upon the branch of a tree, which, joined to the length of the bill, gives it an air not easily mistaken. It forms the type of a distinct genus, and stands in need of further investigation. The natives amuse themselves in shooting these little creatures with an arrow blown though a tube, which, in the Malay language, is called a sumpit-an, (from *sumpit*, narrow.) The one that I examined was pierced through with one of these arrows, and brought down from a high tree on which the nest was suspended. The tree was one of a group that grew near some dwellings; so that the little bird, though still and noiseless, is not altogether unsocial.

Sea-swallow.

As we were passing the Carimata Islands, off the western coast of Borneo, we were visited by the tern or sea-swallow, which I had seen in my former passage up the China sea, not many hundred miles from the same spot, as this species has a certain range among the islands that strew the sea between Borneo and Sumatra. The bill and feet are deep black; the throat and under parts of a snowy white. All the upper parts are of a brownish black, which reflects a peculiar redness when the sun falls directly upon them. The feathers upon the head, nape, and back, are edged with white; hence the smaller the feathers on any part, the greater is the quantity of white. There is a white line also over the eyes. The purity of the white is admirable, which appears the more striking because it is contrasted with the black. The tail is forked and long, as are also the wings. But, notwithstanding the advantages for flight, the bird is soon tired, owing to the rapid and incessant motions of the wings. When tired, it cannot rest upon the wave, as the petrels and other sea-birds do, but is obliged to seek for some object whereon to alight.

When it comes on board ship, it is generally very fatigued, and glad to repose under any circumstances; hence they are thought to be very foolish birds, and have obtained the whimsical name of noddies, in allusion to their want of head-piece. The one I am describing had a black and lively eye, and rested with great composure in the cabin while I took a sketch of it; but as the wings were dropped or raised to rest the different muscles, the outline and attitude were so often changed that it turned out to be a very stiff and unfaithful likeness.

Blennius punctulatus.

A specimen in the Paris Museum was the only subject from which Lacepede drew his description of the *Blennius punctulatus*, without any reference to the place where it was found. It too often happens that, in trusting to our memories, we neglect to make a memorandum; but find upon trial, that so many ideas have passed through our minds, that the dates and localities have been so mixed up, that we cannot adjust them by any effort of the mind, unless some note or label comes to our assistance. In the present

instance, the bottle containing the little fish is numbered, but the memorandum is not to be found.; so that I cannot say with precision where I obtained it, but my impression is that it was brought me by my servant at Ternate. It is a very pretty little fish, about three inches long; that in the Paris Museum is five. The fin on the back reaches like a crest from the head to the tail, and is, like the rest of the body, clouded with melting shades of brown and blue. The rays in this fin are soft, and terminate in a free point. The posterior fin on the under part, called the anal fin, is of the same nature and appearance; and extends from the abdomen, which is seated far forward, to the tail, and thus produces a neat correspondence with that on the back, especially where it is of the same color and the same breadth. The tail is rounded, and may be compared to a fan about three parts shut, and is of a delicate white, as if the stains had, by the application of an acid, been cleansed out. This roundness is a family mark, and is sometimes extended into an angular pointing, but never, I believe, exchanged for the fork, which is, we all know, the most common form. In the description given by Lacepede, the

pectoral fins are said to be very large, which does not apply to the specimen before me; though, if not big, they are conspicuous for the neatness of their form, their even breadth and fan-shape. They are, like the tail, of a dilute white, translucent, and of a soft pliable texture. The ventral fins, or the pair that are placed under the pectoral upon the belly, have only two rays, which are partly separated from each other, and are of different lengths. In the *Gobius* and *Periophthalmus*, the obvious mark of distinction is found in the junction of the two ventral fins; which, after the fish has been kept some time in spirits, is so gathered up as to form a shallow cup. In the Blennius, the essential character is read, still, in the same ventral fins; but here, instead of one, we have a pair, that at most have only three rays, but far more frequently only two. Nor is the artificial distinction set up merely on the ground of convenience; for no family or genus can be more natural, in respect of general form, length of dorsal fin, the shape of tail, obtuseness of the head, and the slimy condition of the integuments. If one will take the trouble to read the description of half a dozen different species, he will find in

how many parts they harmonize and agree together.

The name *punctulatus*, as given to it, is descriptive of the minute dots with which the head and other parts are pitted. It is an excellent nose for specific difference, and may be traced by a magnifier of inferior powers. The head is flat, and the eyes large and prominent. The mouth is a small chink in the anterior corner of the body, provided with minute and closely set teeth. The small extent of the gape seems to keep out the air when the fish is from its native element, and corresponds with the gill-covers, which shut firmly when under the same disadvantages. Owing to these circumstances, and the slimy nature of the surface, the fish can survive a removal from its native medium a long time; and is thus enabled to leap out of the water, either for pastime or food, without the slightest inconvenience. After having been kept several months in spirits, it is a very neat preparation; the freshness of the color has been somewhat impaired, but enough of it remains to form an idea of what it was originally; and the neatness and regularity of form is no less apparent

than when it was first caught. I only regret, for my own sake as well as that of icthyology, that I do not know more about its history. Our theories and our most ingenious conceits are often doomed to enjoy only an ephemeral existence; but our contribution of facts to call into notice the works of God, are valuable, however small they may be, and will live on record and quotation when the place that now knows us will know us no more.

Pimelepterus.

On our passage from Ternate to Zamboanga, not far from the straits of Basilan, one of our officers pierced this fish through with an arrow. It belongs to the Chœtodon group, characterized, among other marks of distinction, by the presence of scales upon the dorsal and anal fins. In other families of the "finny drove," the membrane that connects the rays of these fins is smooth; but in the case of the Chœtodons it is partly invested with scales like the rest of the body, with this difference only, that they are of a smaller size. By means of these scales the fin often seems to be continuous with the body, at

least for a considerable part of its length. The rays near the head are hard and sharp, which places it among the acanthopterygious fishes, or such as have spiny rays in their fins. In the pimelepterus the fins are thick, and somewhat of a fatty consistence; which led Lacepede to distinguish the genus by a name that is compounded of the Greek words for *fat* and *fin*. But when the presence of scales upon the fins, and the thorny nature of the rays, have conducted us to the Chœtodons, we then find an admirable note for separation in the nature of its teeth. They are arranged in a closely set and regular series, with a horizontal surface or ledge behind, and a sharp trenchant edge in front. The two parts may be compared to the tread and rising of a stair; in miniature, indeed, for the teeth are very small and fine. Its length was between seven and eight inches, and its breadth about two and a half; and therefore differs from the Chœtodons in external form, where the great breadth, compared with the length, is a remarkable feature. The ground color is blue, varied by brown stripes. The tail is forked, with a large stem or base. The head is small, with a

prominence between the eyes. The back, from the highest part, slopes down in an easy curvature, which terminates at the mouth. The anal fin is rendered to the eye continuous with the body by the prevalence of the small scales which cover it. The ventral fins are a little behind the pectorals. The anterior gill-cover has its edge finely toothed; but both this and the posterior gill-cover have neither spines nor teeth of any magnitude. They are both encrusted with scales, like the rest of the body, except in the neat and elegant border of the anterior gill-cover just mentioned. There are no teeth in the palate, but we find two small beds of minute ones at the termination of the bronchial arches.

It has been too much the custom to confine our descriptions to the outer and more obvious conformations; seeming not to remember that all the parts have been wrought by the same great and gracious contriver of all things. David had so much admiration for the internal structure of the human body, that he calls it embroidery—an art which, in his time, for refinement and beauty exceeded any other,—"when I was *curiously wrought*;" Ps. 138. The reference to

these parts often throws much light upon the economy of the animal, while they never fail to show how much the happiness of those beings, that are often caught "in an evil net," has been provided for by their Maker. The internal parts had been injured by the arrow; but some remained entire, and could be studied. One or two particulars may be mentioned without running into technicalities, which I am desirous to avoid, though in many cases they might be put under the category of "necessary evils." The intestinal canal is long, but so broken that I could not ascertain its length; near the anterior part it runs out into a pouch, which we must call the stomach. Not far from it we meet with a cluster of filaments resembling the fringe of a curtain. This cluster of fringes surrounds the intestine; and as each thread is hollow, and its structure glandular, it is presumed that they secrete a fluid like that of the pancreas in higher orders of creation. If the portion of the intestine be cut off and put into water, a very beautiful display of neatness in organic formation is offered to the eye, especially if we view it through a magnifier. These, by general consent, are now called the

cœcal appendages. They exist in many families of fish, so that those who have a mind to examine them, need not travel so far as the southern half of the Philippines to collect the Pimelepterus. But in this fish, the intestine below is enlarged into a sort of colon, or perhaps a second stomach, or repository for nutriment. But the arrow had done so much mischief here, that my ideas were not clear upon the subject. The spleen is small, but conspicuous from the redness of its color. Physiologists have not yet come to any satisfactory conclusion respecting the office of this part, but its importance seems to be indicated by the fact, that we are obliged to descend very low in the scale of animals before we lose sight of it.

Periopthalmus. Close-eyed Gudgeon.

In the island of Ternate, you seldom advance towards the edge of an estuary, or small inlet of sea-water, without putting to flight a swarm of little fish, which, alarmed at the sound of your feet, thus hurry away to take shelter in their native element. Their size is so small, and their motions so rapid, that without a previous acquaintance the spectator can hardly persuade himself that they are fish. "A fish out of water,"

is a condition so unnatural, that by tradition it has long been applied to a man in uncomfortable circumstances, and especially such as were not of his own choosing; yet, in the close-eyed gudgeon, we have an example where the members of the "finny drove" come forth to bask in the sun, to catch their food, which consists chiefly of small shrimps, or to escape from their enemies at home. The pectoral or principal pair of fins have their base longer than it is in the generality of fish, and so furnished with muscles as to be capable of pointing towards the ground. In this position they answer the purpose of fore-legs, and teach us, that in use as well as position they correspond to the arms of man, and the first pair of legs in the higher orders of the animal creation. The head, like most of the family, which includes the gobies and the blennies, is obtuse, and higher than the body. Upon the front, the eyes are placed close together,—a circumstance that is referred to in the meaning of the generic name, Periopthalmus. They are prominent, and have a lid that will cover the eye at the pleasure of its owner. As this fish lives a part of its time in the midst of light strongly reflected from the sur-

face of the water, this provision may be intended to guard the eye against that inconvenience. In addition to this there may be another object, which we shall understand when we recollect that the refraction is greater in water than in the air, so that the eye of a fish has a lens that refracts more than that of an animal living out of water, in order to give the rays the due degree of convergence. When the fish is out of water, this necessity is dispensed with, and the eye is no longer adapted for seeing distinctly. Too great a convergence is thus given in their passage through the lens to all rays except those that coincide very nearly with the axis of the eye, which, by the contrivance of half-shutting the eye, are excluded, while the former only are admitted. And that I may not take the reader into optical considerations that are out of his way, I need only refer him to the case of near-sighted young people, where the imperfection of sight results from too much convexity in the parts of the eye. These generally look at objects when they wish to see distinctly with the eye nearly closed. The little fish we are describing, is, when out of the water, in the situation of a

near-sighted person; and his Maker has given him the same means of abating the inconvenience.

In the goby we have a very obvious mark for family distinction, in the union of the two fins that are seated on the breast into one, which in form may be compared to a lady's fan. The periopthalmus is like the goby in this particular, as it also is in the length of the second fin upon the back, and the soft nature of the rays. The individual that I have before me was taken upon an island not far from Macao. The general color above is bluish, passing into a silvery white below. The second fin upon the back, and that of the tail, are deep blue, with a range of white spots. The first fin is blue and speckled with white, and has three soft rays prolonged into threads. The tail is pointed, and the anal fin is narrow and white. The teeth are very small and closely packed together. The scales are small, and the body is covered with a slime to counteract the effect which drought would have upon the integuments. The gill openings are small, and shut closely, so as to exclude the air from the bronchia; hence it can live a long time out of water, and may be packed in a piece of

paper, and carried some hours in the pocket, and when taken out, will be fresh and lively: so that it is every way fitted for taking excursions upon the shore. Had the fins been prepared for moving upon the land, and no defence given against the air, the adaptation would have been of no use to it; and had no care been taken to cover the eyes, their position upon the front of the head would have exposed them so much to the light, and the appulse of diverging rays, that these again would have been a means of pain, and not of advantage. Thus, in the case of a little fish has God so tempered the parts, and so nicely adapted them to one another, that they all conspire to produce one end. If so much wisdom and goodness are displayed in behalf of a creature so inconsiderable, what may we not expect for ourselves, who are of more value than many fish, not only in the conformation of the body and the furniture of the mind, but also in all the providential adjustments by which we are fitted for usefulness here and for enjoyment hereafter.

Balistes violaceus. Violet-colored File-fish.

This is a large and beautiful species, belong-

ing to the genus Balistes, which one of our officers caught with the grains a day or two before we reached Ternate. It was about fourteen inches in length, and about four and a half broad. The color is uniform, and of a dark violet, which has induced me, upon the presumption that it is a new species, to give it the specific name of *violaceus*. The scales are large, and adhere closely together, and are of a rhomboidal shape, like the panes of glass in a cottager's window. Upon the centre of each rhombus or lozenge, we find a pavement of granules surrounding the base of a process that is sharp, and may be compared to a thorn. The hardness of the covering, which could with much difficulty be cut with the sharp knife of a seaman, and this furniture of hard grains and spines, afford ample means of defence, as we should suppose, against all the chances of an assault. The first dorsal fin is generally a powerful spine, with a serrated edge, that is received into a groove behind it. Two or three smaller rays are sometimes found behind it, which, when depressed, will draw the larger spine after them; whereas, if you apply the effort to the spine itself, it cannot be forced

down without dislocation. By this contrivance it becomes a formidable weapon of offence and defence. The rays behind have, from the analogy of their use, been likened to the trigger of the balistes, or the engine used for hurling stones and other missiles among the Romans. In that engine, the *sufflamen* shasteria, or trigger, was much larger, and its action more conspicuous, than it is in a rifle; which any one may see by consulting a good representation, where a catch or trigger will be seen upon the side of the platform on which the sliding table was made to traverse. Hence, because the movement of the first dorsal fin in some species of this fish, particularly the *Balistes capriscus*, or Mediterranean file-fish, which served as a model for all the rest, resembled one part, the fish has obtained the name that belonged to the whole engine.

In the violet file-fish we are describing, there is a solitary spine between the first and second dorsal fin, but there is no spine upon the breast to represent the ventral fins. The second dorsal fin is large, thick, and of a triangular shape. The anal fin is of the same form, and corresponds very nearly in size and position. The

shaft of the tail is long, and the caudal fin has its edge slightly hollowed out or lineated. The eye is large and prominent, and is placed high upon the head. The mouth is small, and the teeth are fitted for cutting, and run some distance upon the outside of the gum; but I should, from a contemplation of the mouth, have formed a very inadequate idea of its powers in securing and swallowing its prey, had I not found a small fish of the same genus entire in the stomach. The cavity of the abdomen is large, and the sound or air-bladder thick and voluminous. The stomach and œsophagus were capacious, and of a thick texture in respect of their coats; and thus both are well fitted for swallowing a large morsel, and bearing its pressure without inconvenience. The liver was of a pale color, and rested in a double furbelow or fringe upon the intestines. The remains of this fish were left upon a plate until the evening, when the mouth and the uncovered part of the muscles became luminous. The light was blue, but not very intense. My opinion is, that this phenomenon comes under the character of combustion, according to this important definition, "Whenever the

chemical forces, which determine either composition or decomposition, are energetically exerted, the phenomena of combustion or incaudescence, with a change of properties are displayed." Now, it is plain that a process of decomposition had commenced in this case, which increases in vigor to a certain limit, and then decreases. All the while the phosphorescence continues to have a constant ratio to the intensity of the chemical action. We thus arrange these often pleasing and illusive appearances under a class of phenomena with which we were previously acquainted, and about which experimental deduction enables us to reason to a certain extent. These remarks were suggested to my mind while thinking upon the luminous show that decorated the gloom of the cabin; the same theory has probably occurred to others, and merits a more extensive verification. It is useful to have some hypothesis founded upon analogy to guide and give spirit to our researches; for, unless we have something of the kind, we are like the Israelites, who saw many things but observed none. It would be far more elegant, and I think philosophical, to consider the luminous powers of the

glow-worm and the lantern-fly as a kind of combustion. Some matter is secreted, which takes fire upon exposure; an idea that is countenanced by the circumstance that the brightness depends upon the health of the insect. In the electrical centipede it is evidently material, as I have seen one crawling upon the leg of a table, which left a long trail of light behind it. In all departments of nature, we can refer a multitude of phenomena to a single law; we shall not therefore offend against the ordinances of creation by referring those beautiful displays of light to ignition, while we may leave the subject for a fuller and more interesting development to future investigators.*

Ostracion.

While we were at the palace of the sultan of Bruni, a curious *ostracion*, perhaps the species *cornutus*, was brought to us. It is called by the Malays there *buntai kabun*, and is at once dis-

* In the Philosophical Transactions for 1800, p. 161, a number of ingenious experiments are detailed, which prove that a certain *degree of heat* revives and promotes the emanation of spontaneous light; and thus we see it has another item in common with the process of combustion.

tinguished by the square shape of the body, and the four horns that proceed from as many corners of this natural parallelopipedon. Its length was about three inches, its color a mixture of yellow and ash, and the fins gray. The mouth is very small, as it happens in most of this family, and is placed at one of the corners. The stem of the tail is long, which adds to the grotesque appearance of the fish; there is also a small anal fin. That upon the back differs from dorsal fins in general, in having a stem, and being moveable from side to side. The body is covered with a mosaic of hard tessellæ, which have a number of grains upon their centre, that, under a magnifier, exhibit a very beautiful appearance. I made a sketch of this fish in a bad light, and on drawing the tessellæ above-mentioned, I made them pentagons, assuming that form which is the most frequent. But, on looking at the fish with a little more attention, I perceived that most of them were hexagons, which set me upon reflecting on the nature of this figure, its occurrence in certain situations, and its absence in others. This led me to the following conclusion—that if a number of circles or

cylinders were laid together, and then a uniform pressure exerted all around just enough to make them fill up the space, they would all assume the hexagonal shape, provided they were all equal among themselves. This accounts for the hexagonal nature of the cells formed by the bee, because there the tubes are all equal; and it also accounts for the unfrequency in vascular systems, because the tubes are unequal. In botany we have a kind of arithmetic, as the numbers three and five and their multiples are connected respectively with one or two seed-lobes. In crystallography, we see the reason why Pythagoras, who was a great observer of nature, and the geometricians who followed him, gave so much importance to the five regular bodies; this we might call the geometry of atomic arrangement. And lastly, we have the mathematics of vascular systems, and, by the way, of mosaic coverings. A gentleman of my acquaintance told me he was much puzzled in observing that the cigars in a bundle, which had lain under a pressure, were of a polygonal shape. The experiment might be tried by passing a bundle of elastic tubes through a cylinder of which one

end was larger than the other. But by cutting across a vascular structure, such, for example, as the common bullrush, the observer of nature may pursue the idea; and will, I have no doubt, find so much pleasure in the research, that he will thank me for giving him a hint, which is, perhaps, in strictness, a new one. Dr. Wollaston suggested that pressure had something to do in the formation of the honeycomb, but I am not aware that he or any one else has pointed out the principle on which the hexagon depends, nor what it is that occasions a deviation from it in the greater number of instances.

Loranthus.

The various members of this family afford one of the gayest and most pleasing objects in the wilderness. Thus the sons of the forest, at a season when they have neither fruit nor flower of their own, are often decorated with the most showy beauties; and the branches of the parasite are so interwoven with those of the tree, and its stem so completely grafted upon the wood and bark of the latter, that it is not always easy to tell where one begins and the other ends. The one

that is common upon the Bone trees at Macassar has its blossoms of a bright scarlet, while the number of them collected into a single cluster, and the narrow, linear divisions of the corolla, impart a peculiar elegance to the whole. I shall not mention them by their specific names, for the species are so numerous, that, unless I were aided by reference to a large collection, I should not feel confident in deciding whether mine be new, or whether they have already been described. The one just referred to has the divisions of the corolla long and narrow, with the filament running upon the surface, and is so identified with it that they seem to be one. The younger shoots are four-cornered, and emerge at right angles from the stem, which is round, and of an ash color. The leaves are of an oval shape, with a very short footstalk, and their edges have neither notch nor irregularity.

The mode of germination is worthy of notice, and cannot fail to illustrate the wisdom of the great Contriver of all things. The embryo may be compared to a nail for easier conception, driven in at the top of the albumen or white substance of the seed. The birdlime, or viscous

matter, which is found in all the berries of this family that have fallen under my observation, makes them adhere to the first branch they may chance to fall upon. The embryo then nourished by the albumen begins to enlarge and elongate, and to make its way upwards, still retaining the shape of the nail which it had originally. In other plants the radicle is pointed, the better to enable it to penetrate between the particles of soil; here it appears like a flat knob, which answers a double purpose. Its weight bends the rest of the embryo as it lengthens, till, in the form of an arch, it reaches the plane of position. Its size offers a larger surface for attachment, and for imbibing the juices of the bark. At this period it resembles a staple, having one end at the radicle and the other in the berry. When it has got a sufficient hold, the end, by virtue of the elastic force of the embryo, springs from its confinement in the berry, and presents a pair of narrow seed-lobes or cotyledons. In this instance we see how two mechanical agencies are brought into play: gravity, in disposing the knobbed end to fall back upon the bark; and elasticity, or the efforts that the parts of a body make to recover

their natural position, by which the other end looses itself from its confinement, and stands upright to catch the genial influences of the atmosphere. When voided by birds, the viscous matter supplied serves the two-fold purpose of adhesion and manure. The one I found at Bontain was called *tae burvong*, or bird's dung, in allusion to this mode of sowing. The berries are a standing dish among the smaller birds, who do not scruple to eat the leaves by way of sauce. The native who waited upon me at Macassar, told me that the two kinds found there ripened their berries at different seasons, in order that the little warblers might not want their favorite food. The one found at Bontain had its flowers of an orange color, and the berries of a rosy red. The leaves are egg-shaped, approaching to the lanceolate form; the stem is surrounded with irregular branches, for there is neither beauty nor proportion in the stems of these plants, in compliance with economy, as all grace would be thrown away amidst the foliage of the tree. The stem is covered with a leprosy of ferruginous spots. The tube of the corolla is very long, and the segments are five, bent down, while the stamens

stand erect. The berries are of a most lovely color, but, in spirits I see they have lost their tint, and so sympathise with the rest of the plant; for, notwithstanding the great beauty of the leaves and flowers, all is dissipated in drying; and the most handsome specimens, when put between papers, come out of the uniform iron color.

The individual that I found in one of my walks at Borneo, bore very long clusters of vermilion flowers, which were contrasted with the yellow of the anthers and the fresh green of the leaves, forming a most delightful spectacle. The lower part of the corolla was nearly hemispheric, while the divisions or petals ended in narrow slips, that turned and twisted like the crankled horn of some kine. The branches make a right angle with the stem, and opposite to each of them is three or four racemes of flowers diverging from each other. The flower-stalk is colored red. The leaves are egg-shaped, with entire edges, and very indistinct veins, smooth, and of a shining green. Their edges were much eroded by birds, who, as before remarked, seem to delight in the taste of the leaf, as they do in that of the berry. The little ball into which the low-

er part of the flower is folded, is filled with honey, which is no less acceptable to the four-winged insects than the berries are to the little birds. The style or central pillar of the blossom has its head so much enlarged as to resemble a club.

The other, that I found at Macassar, has the flower headed like a mace, as the corolla is tubular, and its four divisions are short, and of an oval shape, holding the anther in a kind of concave valve. The flowers are covered with a ferruginous pubescence, and do not exhibit the splendor of the other species, though there is not wanting a neatness to give them interest. The leaves are oval, pubescent upon the under surface, and the lesser branches are round, with minute specks of brown. This is but a glance at an interesting family, whose history is not fully developed; for we are too apt to snatch off a branch and run forwards in quest of a new object; so that we lose many a curious fact, not for want of inclination, but for want of time and leisure.

Lame plando is a name given to the potato, (*Solanum tuberosum*) at Bontain. *Plando* is a softened form of Holland, from whence they have received this vegetable; and *lame*, I conjec-

ture, is the name of the sweet potato, (*Convolvulus batatas.*) They are excellent, as they combine a waxy color and appearance with the mealy texture of the opposite kind. The natives here seem to understand the proper mode of dressing them. Their goodness is owing to the hilly nature of the country, and the loose and crumbling character of the soil. The tuber, being a subterranean stem, requires the effect of the sun's rays upon the soil above to maturate the juices, while the scarcity of moisture prevents the top from spreading too much at the expense of the parts under-ground.

A fine sample of the palms is common at Bontain, the *Borassus flabelliformis*, or palmyra. It is known there by the Hindu name of *tala;* and is sometimes called *lontar*, a word partly of Javanese origin, and partly of Hindu; as *lon* in the former language is *leaf*, and *tare* is a mutation of *tala*, the palm. Large groves of it are not uncommon upon the sides of the hills, while the cottager takes care to have one or two planted near his dwelling to yield him his favorite beverage. The juice obtained from the top is very grateful, and would be relished by nine hundred

and ninety-nine out of a thousand; but the thousand, unused to the practice, would not like the taste when drunk as the natives prefer it. Instead of a clean vessel, they choose a bamboo cylinder, in which the juice has been allowed to turn acid; this, of course, sets a fermentation at work in the fresh juice, and by the time the cylinder is full, the acidifying process is complete. In the same way the Sandwich islander does not taste his favorite mess of pottage, the *poe*, made from the *taro*, till fermentation has given it the required degree of smartness. To our palates sour bread is by no means delightful; yet the Sandwich islander does not choose his food, nor the native of Bontain his drink, unless it has a taste very near this kind of acidity. The fruit is very large, shaded with a mixture of yellow and brown, and grows in clusters upon the top of the tree. The barren flowers are disposed in three spikes, that might be likened to the imaginary trident of Neptune—a feature so remarkable, that the most careless gazer would not fail to remark it. The lower and the upper parts of the trunk are covered with the old spathes, which afford moisture and a pabulum for many a pretty

fern. There is a peculiar neatness in the contour of this palm, which applies to the stem, flowers, and fruit, as well as to the noble fan-shaped leaves, which taught mankind at first the beautiful device of a lady's fan. A one-sided ladder, or a bamboo with a part of its branches left, is lashed to the trunk; and by this rude and compendious machine the native ascends the tree as often as is necessary to replenish his bamboo jug, which is handed from guest to guest, like a noggin of ale on a Saturday night.

Canong canong of Ternate.

This is a very noble grass, and one that, for its showy form and great utility, may take its place at the footstool of the bamboo. The joints are very close together near the top, from each of which a tall branch issues, corresponding to a long leaf on the opposite side. These branches terminate in a feathered spike, that nods gracefully by its own weight, and are, upon an average, each about six inches in length. They afford very delicate canes, and, as we remarked, while the leaves bend into curves, so that the whole tuft seems to have been arranged on purpose to

produce the greatest possible effect. The stem is smooth and yellow, and generally without the slightest deviation from rectitude. It is made into garden fences, of a light and delicate nature, and answers the purpose of a walking-cane. As we were travelling up the steep sides of the mountain to view the volcano, one of our attendants took one from a fence, and, after having cut it of a suitable length, put it into my hands, with a hint that I would find it useful ere we reached the slope before us.

The feathery appearance is due to an involucre, or ruff of bristles at the base of each flowret. These bristles, when examined with a glass, are found to be winged with little points. The glumes or chaffy valves are very thin and transparent. One of the twain is less than half the length of the other; and the larger has five nerves running nearly parallel upon it. The inner pair of valves is hard and much thicker, and differs altogether, in texture, from the glumes. One of them enfolds the other with a firm embrace. The stamens, which have short filaments, and therefore do not make their appearance out of their hiding-place, come away with the small-

er of the two valves. The anther is yellow and smooth, with a slight division of the cells at the summit. The feathered stigmata are of a purple color, and stand out above the highest points of the valves. There is no awn or beard at the tips of any of the four valves. The flowers are not always perfect, that is, they do not always contain both the fertile and the barren parts which are necessary to fructification. I did not take the pains to measure the height, but I judge it was often more than twenty feet. It prefers the sides of the mountains, where it finds an abundance of nutriment, shade for the soil in which it grows, and a moist atmosphere. In turn it affords a shade for other plants, which flourish and blossom in its neighborhood. Some flowers choose the open plain, but many of the greatest curiosity grow where the ground is ever moist, and the air seldom ruffled by a breeze.

Huluyak.

A name given to the *cleome viscosa* at Zamboanga. It seems to be of Tagala origin, from the ease with which it may be written in the character belonging to that dialect. When we

are in doubt about the etymology or native country of any term, it is not a bad criterion if one orthography is better adapted to express its sound than another. If, in the present instance, we write hulayak in the Arabic as if it were a Malay word, it looks clumsy and unnatural; while the Tagala affords us the means of doing it with neatness and propriety. Botanists have placed the *Cleome viscosa*, which is the same as icosandra, in the newly-constituted genus Polanisia, on account of the number of stamens, which vary from eight to thirty-two, the smallness of the torus or receptacle, and the short stem by which that pod is raised above the receptacle. Loureiro long since puzzled himself with this plant; for, said he, I can find no such glands as are spoken of, neither do the stamens show any reason why they should call them tetradynamous, as there are many more than six. In the *Cleome*, those little prominences upon the receptacle, called glands, are very remarkable; and with the stalked nature of the germen, and the unequal length of the stamens, afford characteristics that cannot easily be mistaken; but in this genus they fail, though all the plants have the same habit.

The leaves are composed of three egg-shaped leaflets, but broad towards the end, and terminate in a point. Those leaves that accompany the flowers are divided into three leaflets, as if they had given something towards the formation of the flower-stalk. The outer parts of the flower are white, but the inner are of a deep purple. The pod is four times as long as its peculiar stalk, and raised into little elevated dots by the enlargement of the seeds. The plant is about a foot high, and grows in the neighborhood of dwellings; and hence in spots where its beauties are not much set off by the surrounding verdure. Plants are different in their choice; some love retirement, and are only seen by the prying eye of the botanist; others, as if fond of society, are seldom to be met with a furlong from the dwelling of man. The *hulayak* is said to be used in India as a remedy for deafness, the leaves being inserted into the ears. In Zamboanga, if my informant did not deceive me, the leaves are eaten as a salad.

Rukam. Flacourtia cataphracta.

In one of our scarce walks at Borneo, we pass-

ed under a tree that had its branches garnished with a profusion of white flowers, in such a manner that when one looked up from beneath its shadow, the whole top was a delightful mixture of green and white, while the light was admitted through various openings to render the decorations of these natural arches visible. Charmed with the sight, I was just going to ask a native to climb the tree and fetch a branch down, when a trunk, covered with frightful thorns, caught my eye, and laid one of the most cogent vetoes I had ever seen upon any attempt to plunder its leafy glories. These thorns invested the trunk, and were divided into many keen branches, which pointed in every direction. The coping upon the wall of a miser, thickly set with branched spikes to defend the choice fruit of his orchard, never looked more forbidding; and they struck my imagination so much, that I could not help turning once and again to look at them. The trunk is about six inches in diameter, the top spreading, and about thirty feet from the ground at its summit. I was therefore obliged to content myself with such flowers as I could find upon the ground. These were very small, so that the

figure which they made upon the tree was owing to their numbers, and not to their magnitude. It belongs to a family, where the fertile and barren parts of the fructification are in different flowers. The calyx, which constitutes the whole of the outer parts—there being no corol—is divided into four or five segments, and spreads out like a wheel, while the centre is occupied by a tuft of stamens, more than twenty in number. These blossoms of course were only of the barren kind, which are shed betimes; for, as soon as the fructifying dust is dispersed, they are no longer necessary. On the contrary, the fertile flowers adhere to the tree as containing the fruit and the means of propagation. The wisdom and economy of nature is manifested in attaching such flowers by a hold of increasing strength, while the others are so loosely seated, that they have but just reached their maturity, when the first breath of wind is sufficient to dislodge them; and they cease forthwith to encumber the branch with their presence, or draw upon its resources for their support. The leaves are of an oval form, and of a fresh green, and stand singly, which is one of the peculiar features of the

family. The natives represented the berries as eatable.

Maritana.

The name by which the *Bryophyllum* calycinum is called by the natives of Mindanao. This is, perhaps, the original word; as *daun sedingin*, 'the cooling herb,' its name at Malacca and Singapore, seems to be an extemporaneous term of convenience, and not an appropriate designation, though it expresses very well the common use of it. The leaves are neatly scolloped, and edged with purple. When the leaves are laid upon the ground, the notches throw out little sprouts, a fact that interests both natives and foreigners, so that a leaf has been brought to me as a great curiosity The leaves will retain their freshness a very long time, and a plant looked green and lively after several weeks, though the table on which it was placed was daily exposed to the rays of a vertical sun. The flowers are shaped like a bell, and hang down as bells do, except when the ringer, by well-directed strength, has raised them with the mouth toward the zenith. They are peculiarly graceful

in form, drooping position, and in the softness of their coloring. It grows only in certain favorite spots, but then in great profusion. Soft and moist earth seem to be the attractions. Near the mosque at Malacca it grows in large quantities, and I remember a bed of it at Singapore. At Zamboanga it grows most copiously in the alluvial spots not far from the sea, where it is befriended by the shade. Its pharmaceutical nature is cooling, whence it is applied as a refrigerant to inflammatory swellings in Malacca, Mindanao, and Macassar. Perhaps it was something in the fleshy appearance of the plant which in the first instance led the natives to use it for the purpose of soothing the anguish and quenching the heat of an inflamed part. It belongs to the same family as the common houseleek, which has, from time immemorial, been used in burns and scalds to abate the pain and expel the heat that was presumed to be in the affected member. It is amusing to see how systematic deductions, and the experience of the common people, in many instances harmonize and agree together. In the Bryophyllum, belonging to the houseleek family, we anticipate some resemblance in properties,

which have long since been established by the experience of many distant nations. We call the family Sempervivæ, which is by no means forced when we refer to the plant before us, since we see how vivacious the whole of it is, and how that the leaf wants a very small temptation to induce it to send forth half a score of shoots to propagate its kind.

Cassia alata.

In all the warmer climates, a collector is sure to find a species of Cassia, should he find nothing else to requite his toils, especially if he is travelling near the sea-shore. In South America, the Indian Archipelago, the peninsula of Malacca, and in China, I have found this observation true; and have reason to believe that it is the case in places where I have not had the pleasure of making the inquiry of an eye-witness. The species are generally recognized by winged leaflets, yellow flowers with irregular stamens, and pods that have always something peculiar and different from the rest. The frequency of their occurrence is apt to make them but lightly esteemed, and the botanist throws a Cassia into his box

with as much indifference as if it were a dock or a thistle. And yet there is not, perhaps, a single individual belonging to the old Linnean genus, Cassia, as retained by Decandolle, which amounts to two hundred and eleven, that is not possessed of some active qualities, and such as might be serviceable to man in some of the most common forms of disease. The one before us bids fair to be of the highest importance as a specific for the ringworm, a disease that spreads so much alarm in our families and schools. Whence it is called by the French *dartrier*, or the plant that cures the *dartre*, or ringworm. If the pounded leaves, when applied to the diseased parts, are efficacious in removing such unsightly and painful disorders as the various species of porrigo, it would be worth the gardener's while to have the shrub ever growing in his hot-house or conservatory. The Malays call it *goling-gang*, or *daun kurap*, on account of its being applied to a certain class of cutaneous disorders. At Zamboanga, they call it *capurco*, and say that it is highly useful, when applied in a pounded form, as a remedy for swellings in the abdomen. The governor of that place, it seems, being one of those invalids

that exhaust the apothecary's list of remedies long before they get rid of disease, was resolved to try one of the native medicines, which happened to be the one in question; it was laid upon the abdomen, and had such an effect that the sensation seemed to pass through him. I have not seen it tried, but imagine that its properties are highly diuretic. When it fails in the hand of a native, it may be owing to the fact that he overlooks the constitutional irritation which kindles the malady afresh.

It is a handsome shrub, with a spike of large yellow flowers, which display themselves at the top of the foliage. The leaves, compounded of leaflets, disposed in a winged manner, are large, and have a peculiar neatness in their contour. It grows very commonly in Malacca, and in most places in the Indian Archipelago; and is a favorite in the gardens at Singapore. In Mindanao it is very plentiful. Its specific name, *alata*, or winged, was given to it on account of the four edges, or thin expanded corners that decorate the pod.

Landra.

A name given at Macassar to the *daun lagondi*, or *Vitex trifolia*. This shrub is very common upon the sea-beach in all the islands of the Indian Archipelago; and may be readily known by the threefold nature of the leaf, the hoariness of the foliage, and the blue color of its flowers. The stems of this species, and of that which takes its place when we advance as far as Macao and the islands of Loochoo, are long and pliant; so that the name of Vitex, (from *vico*, to bend,) was applied to the chaste tree on account of the facility with which the twigs could be formed into withs to "marry" the vine to its favorite elm, is in this case very appropriate. In walking by the sea-side I have often admired this shrub, which looked so fresh and happy in the midst of sterile sand. The deep blue of the flowers, dispersed here and there, are very much set off by the pale-green of the leaf, which is smooth above, with a greyish pubescence underneath. The seed vessel, which succeeds the blossom, is remarkable for the neatness of its outline, so that one might fancy it had undergone some part of the process in a turner's lathe. The most fertile

spots in nature are richest in vegetable growth, not only in comeliness of form and color, but also in variety and number of species; but the most unprepossessing are not without their allotment of natural decoration, so that we may say of all places, that not one of them is barren. We may find something to refresh the eye, delight the sense of smell, and, if the will be present, enlarge our experience. The scent of the *landra* is very agreeable, aromatic, and indicative of stimulating qualities. The natives lay a pile of the leaves upon a small fire, and then place themselves over the steam as a cure for some disorders. Applied in this way, it is a favorite remedy at Macassar among the compounders of simples.

At Borneo, they have a peculiar name for this kind of fumigation, which is by no means confined to the use of the landra, but is extended to many other plants. During our stay at the last-mentioned place, I was often solicited for sheets of the paper in which I folded my plants. The applicants told me that they wanted it for a medical purpose, which led me to make further inquiries; but by the use of this solemn language, they only required it as a material for certain

long and delicate points, which, by being twirled in the external passage of the ear, excited a pleasing titillation. Afterwards, a chief seeing that I was disposed to gratify the beggars, asked for some to burn for a medical purpose; but I laughed at the idea, and told him I did not bring paper so far to light his fires. At length he explained his meaning, and said that the paper was to be cut into small pieces, and when a heap of simples had been laid upon it, lighted; the patient, meanwhile, sitting over the blaze, and steaming himself with the warm effluvia. Such remedies, however, can only be palliatives; they may ease pain and relieve depression, but the cause of disease will remain where it was before. This little story shows that it is not safe to set down things on the first impressions of hearsay; for if I had affirmed that the people of Borneo Proper use Chinese paper as a medicine, I should have told a very ridiculous untruth; and yet the people many times asked for it as an *ubat* or medicine.

The *Vitex ovata*, mentioned before, is very common at Macao and other parts of the coast. The leaves are obovate; that is, broader at their

tip than at their base, covered on both sides with a soft pubescence, but more copiously upon the under. The same pubescence clothes the outside of the corolla, which, like that of the *landra*, is of a most lovely blue. The stamens and pistils are tinged with the same color, and the anthers part so as to resemble the barb of an arrow. Those who have seen the *Vitex agnus-castus*, or chaste tree, will better appreciate these remarks, and see in how many respects the species of the same genus agree. We often look over the simples that are sold by the herbalists in China, but never observe the Vitex ovata, which is rather to be wondered at; for if we judge from the sensible qualities of smell and taste, it must be similar in its properties to the landra.

Tunchong,

A name given by the natives of Macassar to a species of *Pontederia*, that grows frequently in the swamps and shallow pools that diversify the level expanse of alluvial soil, stretching from the residences of the governor and settlers towards the ancient Goa. The Bu-

gis, I am told, designate it by the name of *tolo*. It belongs to the family of Commelinæ, of which the members are well distinguished by the blue color and fading nature of their flowers, the delicacy of their herbage, and their moisture-loving habits. There is generally a want of uniformity in the stamens, which are of different sizes, or bear anthers of no one kindred. This forms a characteristic by which they may easily be recognized, especially when taken in connection with a still more obvious circumstance—the leafy cradle, in which the flowers are wrapped while budding. It is the case so remarkably in the Commelina, that one might imitate the arrangement by taking a leaf, folding its two edges together, and then placing within the hollow a certain number of flower-buds. In the Pentederia, the spike or raceme breaks out from a crevice in the stem near the base of the footstalk, and is cradled in an appropriate floral leaf, which at first invests it all around, and afterwards appears as a bract on the under-side. The calyx, or the green portion of the flower, and the corolla or colored part, are united into one; the former is represented by six ribs on the

outside, and the latter by an azure lining, which forms the beauty of the blossom. But they soon fade, in compliance with the family custom, and twist themselves up in a spiral manner. As Macassar lies to the southward of the equator, these plants are, I suppose, in their prime in December and January, soon after the commencement of the rainy season; for the specimens that I collected had curled up their flowers in token of having finished a part of their destination. Two out of the half-dozen stamens have blue anthers, which are longer than the rest. The filaments, or thready part of the stamens, have a filmy or membranous border, which is ofttimes very closely allied to the germen and future seed-vessels. The seeds are attached to a column composed of three parts in the centre of the seed-vessel; the partitions were not obvious, though the three seams upon the outside were plain enough. The leaf has a long footstalk, and is of a heart shape, inclining from the depth of the nook to that of an arrow. The texture is very delicate, and the fineness of the nerves, which diverge and radiate from the point of

junction, is in keeping with the delicacy of the material.

In reference to physiology, these plants have a texture that is loose and cellular. When the stem is cut across, we meet at first sight with what seems to be a number of tubes, but further examination shows that they are hollows, which have not been filled with cellular tissue. When rapid growth takes place, from an abundance of nutriment, the solidity is generally the inverse of the size; hence, the more flourishing the plant is, the greater is the number of unreplenished voids and hollows. But we learn more easily from such examples, than from those wherein the workmanship is more close and uniform. We can see by the help of a steady magnifier, that the walls of these hollow tubes as they seem to be, are composed of a cellular tissue; and we are led to conjecture that the sides of the bodies where the texture is said to be vascular, are also essentially composed of cells, but of so close and fine a nature, as to escape detection when the eye is furnished with only a common magnifier.

The Commelinas are found in most places in the eastern world, even as far as Kamschatka,

where I remember to have seen a species, notwithstanding the long duration of snowy winter; the Pentederias occur in India and the Indian Archipelago; but the favored region of this family is the continent of America. There we meet with the spiderwort, or Tradescantia, in addition to the two former, most of them delighting in marshy grounds, especially the *Dichorizandra thyrsiflora*, which rears a dense cluster of lovely blue flowers amidst the watery waste, and deserves, from its beauty, to be set at the head of the family. This last genus has two of the stamens standing apart from the rest, which circumstance explains the etymology of the name.

Rasan,

A name given at Bruni or Borneo Proper to two species of Bur-reed or Sparganium, that fringe the banks of its most delightful river. The leaves are long and grassy, and clothe a stem that stands two or three feet above the surface of the water. The heads of barren flowers are collected into beautiful yellow tufts, while those that bear seeds nestle in a solitary manner in the bosom of the leaves. In appearance these

plants very much resemble the screw-pine, or Pandanus, and even upon a closer view the similarity is very striking, not only in the foliage, but in the prismatic wedges that compose the mosaic of the fertile head. I am not the first to point out the analogy that there is between the Pandaneæ and the Aroideæ, the screw-pine and the bur-reed families; but a reference to the Rasan renders that analogy very obvious, and seems to supply the connecting link between the two.

In the screw-pine, the prismatic wedge or fruit is soft at the base, and furnishes a scanty morsel for the natives of those barren spots in the dangerous Archipelago near the Society Islands. It contains several nuts of an elongated form, whereof the meat or kernel is also edible; it thus comes under the botanical denomination of a *drupe*. In the *rasan* the seed-vessel is dry, and merely capsular, and seems to be composed of threads lying parallel to each other. Though the outside is thus grooved, the inside is smooth and polished. There is *one* seed, which is also smooth and of a light brown color, borne upon a little stem or column that stands in the

inner angle of the capsule as one might expect. It has a sweetish taste, but does not melt in the mouth.; so that it would form a dry meal, had a hungry botanist nothing better to feed upon.

The albumen, which makes up the substance of the seed, is of a whitish color, with a mealy spot in the middle. At the base of it there is a small groove, in which the filiform embryo is lodged. The banks of the river cannot be discerned from the profusion of trees and shrubs that grow upon them, and conceal the line that parts between dry land and water. At the very edge of the ever-changing verdure that slopes in every variety of inclination towards the water, stands the *Rasan*, with all the insignia and attributes of a river-plant about it.

THE END.

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